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FOREIGN BROADCAST INFORMATION SERVICE

JPRS Report

Telecommunications

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TELECOMMUNICATIONS

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FEDERAL-PROVINCIAL TELECOMMUNICATIONS MEETING HELD

MacDonald Remarks

Toronto THE GLOBE AND MAIL in English 3 Apr 87 p B5

[Article by Lawrence Surtees]

[Text]

EDMONTON

Federal Communications Minister Flora MacDonald expects Ottawa and the provinces to sign today what she calls a historic agreement on a national telecommunications policy.

"There is a new spirit of co-operation, which augurs well" for an agreement, she said in a speech to an industry association on the eve of the federal-provincial ministers' meeting. The talks are scheduled to end this afternoon after two days of private negotiations at Alberta's Government House.

However, Quebec Communications Minister Richard French, who is co-chairman of the conference, warned late last month that the accord is "not a done deal." Although he is hopeful that an agreement will be signed today, he said the three Prairie provinces have voiced concerns over the proposals.

And industry sources said that earlier plans by federal officials to reach a separate agreement to share authority over some interprovincial matters have been put on hold by the federal Cabinet.

At stake are both the control of a sector of the economy with annual revenue of more than $12-billion and clear rules on competition for the country's 12 million telephone users.

Ottawa is pushing for an agreement that establishes one set of rules governing such things as the right of subscribers to own telephone sets and have access to special services such as cellular radiotelephones, and the right of competitors, such as CNCP Telecommunications Ltd. of Toronto, to hook up their systems with the monopoly telephone utilities.

"We seek to move toward a common level of services that reflects what already exists in the federal jurisdiction," Miss MacDonald said.

She termed current anomalies in the rules significant interprovincial barriers to trade.

In return for agreeing to the national policy, Ottawa will let the provinces regulate telecommunications within their boundaries. Both levels of government also are trying to reach a deal on the joint regulation of interprovincial activities of the phone companies.

There has never been a single national policy governing Canada's many telephone companies, creating headaches for subscribers, especially business users, because different rules apply in various parts of the country.

Ottawa has tried for more than 15 years to create a national policy, and current efforts began in 1984 under former communications minister Marcel Masse. Both levels of government agreed to hammer out the current proposals at a conference in Vancouver last June. The proposals arise from an agreement in early 1985 to undertake a joint review of domestic policies.

"We hope that, when a formal agreement is reached, business and consumers will have the same level of choice in terminal equipment and special services that are enjoyed in the federal jurisdiction," Miss MacDonald said.

Ottawa regulates the two largest domestic phone utilities, Bell Canada and British Columbia Telephone Co., plus Telesat Canada and CNCP. Because the nine next-largest companies are regulated by provincial governments, Ottawa is unable to dictate their policy.

Critics think Ottawa should wait for a landmark constitutional ruling from the Supreme Court of Canada on telecommunications jurisdiction. The decision, expected within the next two years, will determine if the federal Government has the legal right to regulate all aspects of telecommunications.

The case is an example of the problems created by fragmented jurisdiction. It arose more than four years ago because of a legal dispute between CNCP and provincially owned Alberta Government Telephones. CNCP wants its federal regulator to order AGT to let CNCP hook up to the network to provide competing business services.

Although legal experts think the Supreme Court will rule in Ottawa's favor, the Government of Prime Minister Brian Mulroney is eager for its policy to be adopted by the provinces, regardless of that decision.

The provinces fear the case will strip them of any control they hold, driving them to the bargaining table. Federal officials said the provincial governments stand to lose everything if they reject Ottawa's offer.

However, Miss MacDonald is not so excited about efforts to share jurisdiction over interprovincial activities not covered in the first agreement. Although ministers also discussed the development of joint regulatory mechanisms, Miss MacDonald said they are more complicated.

Earlier federal proposals, contained in a draft that was leaked before the meeting, were criticized heavily for giving away too much to the provinces.

Any scheme to share policy and regulation among 11 governments "would make a bad situation worse," said Kenneth Engelhart, general counsel for the Canadian Business Telecommunications Alliance, the largest association of business telecommunications users.

Earlier drafts proposed the creation of a joint regulatory body and a council of ministers to consider matters such as interprovincial long-distance services. However, that idea has been criticized for being too cumbersome and for raising the spectre of two potential layers of regulation over the phone companies.

The agreement also precludes any action leading to long-distance competition, which angers CNCP. Despite strong lobbying for more competition, the national carrier's efforts have found little support in Ottawa. CNCP's application to the Canadian Radio-Television and Telecommunications Commission to compete against Bell and B.C. Tel was rejected in 1984.

However, federal officials said Ottawa could move toward more competition if a national policy is put in place.

Ministers also are expected to work out a timetable for implementing such a policy.

Conference Accord

Toronto THE GLOBE AND MAIL in English 4 Apr 87 p B13

[Article by Lawrence Surtees]

[Text] EDMONTON

Although Canada's 11 communications ministers failed to reach any substantive deal on a national telecommunications policy after two days of meetings here, they signed an understanding to keep trying.

The accord, signed yesterday at Alberta's Government House, must still be approved by each government's respective cabinets. But all federal and provincial ministers have agreed to develop a single set of rules governing ownership of telephones and interconnection of competing systems to monopoly telephone companies in each government's jurisdiction.

Although the specifics of a national policy weren't worked out at the meetings, both co-chairman of the federal-provincial conference are confident a more solid deal can be struck and signed at their next meeting, scheduled for September.

And the memorandum of understanding signed yesterday also pledges each government to work out a way of sharing jurisdiction on interprovincial telecommunications matters.

Although the accord does not go as far as an earlier leaked draft of federal proposals, the ministers have agreed to form a joint council of communications ministers to coordinate policy and have agreed to create a task force that will study the prospects for long-distance competition.

That is good news for CNCP Telecommunications Ltd. of Toronto and business and residential phone users who want more competition. A December poll by Environics, released last month, showed 63 per cent of more than 1,900 people questioned said they want long-distance competition.

Although pleased with the creation of the task force, CNCP is disappointed that it will still take a long time to introduce further competition. That is because ministers have not yet approved introduction of competitive voice services and want another year to study the effects of greater competition before they even decide to let regulators consider it.

"This sounds like a prescription for movement at sub-glacial speeds," said Joe Schmidt, CNCP vice-president of governmental and regulatory affairs.

The terms of reference for the task force will be set within three weeks and a report issued by May, 1988, Quebec Communications Minister Richard French said.

"We're pleased with the results," federal Communications Minister Flora MacDonald said. "Although more specific details are needed, at least we have all agreed to go on with the process and an agreement is in sight."

Mr. French, who is provincial co-chairman of the conference, shares that outlook. "The understanding reflects some tough bargaining and I think specific details can be worked out next September."

There has never been a single national telecommunications policy. And although it is progress that agreement has been reached to develop one, many questions and hurdles remain.

Still to be worked out are the exact services it will apply to; how rules will be co-ordinated; and when any changes will be made. Each government said it will attempt to develop specific proposals for the meeting next September.

The federal Government was rumored to have sought a veto provision to prevent a province "opting out," but failed to get approval for such a provision.

The understanding also does not go as far on sharing jurisdiction as previous drafts, which were criticized for giving up too much to the provinces.

But Ottawa may still have a final card up its sleeve that is keeping the provinces bound to the bargaining table.

/9317
CSO: 5520/28

GOVERNMENT ADOPTS GUIDELINES FOR INFORMATION SYSTEMS

Toronto THE GLOBE AND MAIL in English 2 Apr 87 p B9

[Article by Andrew McIntosh]

[Text]

OTTAWA

The federal Government has adopted a new policy governing the use and procurement of new information technologies and systems.

Treasury Board Minister Robert de Cotret, who unveiled the policy, said it is designed to help Ottawa protect the $2-billion it is investing in new information technologies annually.

"The information management principles and procedures covered by the policy will be used at all levels, from the office worker to the senior policy makers," Mr. de Cotret said.

The policy includes a public endorsement of "open system interconnection." OSI is an international standard being developed under which computer manufacturers would agree to implement system designs that are compatible.

OSI aims to make it much easier for users to connect or link systems from different makers and get them working together.

Jacques Therrien, director of the Treasury Board's information technology group, said the Government will likely make it mandatory in the 1990s for departments to buy equipment only from manufacturers who implement OSI standards.

"We won't move into a mandatory situation, though, until full consultations are held with industry," Mr. Therrien said.

The decision to support OSI followed a series of consultations with industry associations and with the Department of Communications, he said.

Mr. de Cotret will advise senior public servants of the new policy in a letter later this week. Mr. Therrien said policy specifics will be outlined in detail in Treasury Board guidelines to be released by the end of April.

The guidelines will also include details about security procedures used by departments to protect information stored in computer databases or other forms of storage.

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CSO: 5520/27

TELESAT PICKS ARIANESPACE TO LAUNCH TWO SATELLITES

Toronto THE GLOBE AND MAIL in English 11 Apr 87 p B15

[Article by Andrew McIntosh]

[Text] OTTAWA

Telesat Canada's next generation of powerful communications satellites will be hauled into orbit in 1990 aboard Ariane rockets launched from a space centre in French Guiana.

The launch arrangements for Telesat's Anik E1 and E2 telecommunications spacecraft, the company's 10th and 11th birds, were announced by Telesat president Eldon Thompson.

He was joined by Frederic d'Allest, the chairman of Arianespace, the consortium of European companies and banks that manages the commercialization and production of Ariane, the expendable launch vehicles developed by the European Space Agency.

But only seconds after the two executives signed a formal contract in front of reporters, Mr. d'Allest was called upon to defend the reliability of the Ariane 4, which is equipped with four solid rocket boosters.

Four of Ariane's first 18 eighteen flights have failed. And it was learned last week that its next launch, planned for June, may again be delayed because of a mishap that occurred in tests of the rocket's third-stage motor.

(Ariane has been grounded since June, 1986, when a third-stage rocket engine failed to start during a launch.)

Mr. d'Allest said Ariane's track record is comparable to that of U.S. launchers, such as the Delta rocket made by McDonnell Douglas Corp. of St. Louis and Martin Marietta's Titan rocket launcher, in their initial days.

"If you look at the the first 18 flights of these rockets, you will find between four and six failures."

He added that Arianespace's engineers have worked hard to eliminate some early design flaws in the rocket.

"I think that in terms of reliability, we have convinced the Telesat people that we are comparable with the others. We are not better, we are not worse," he said during an interview later.

Arianespace edged out China, which has developed the Long March rocket, and Martin Marietta Corp. of Bethesda, Md., for the multi-million-dollar Telesat contract.

Mr. Thompson said commercial reasons prevented him from revealing how much the spring and fall 1990 launches will cost Telesat, which is jointly owned by the federal Government and a consortium of domestic telephone and telecommunications carriers.

He also refused to compare Arianespace's rates with those charged by the U.S. National Aeronautics and Space Administration, which carried Telesat's last four Anik satellites into orbit.

However, Telesat estimates the total cost for the launches, including engineering and management costs, insurance, and other expenses, will be $300-million.

Mr. Thompson said Arianne was given the nod by Telesat because its rocket is much more powerful and that Telesat could thus load more fuel aboard the two spacecraft, which each weigh 2,500 kilograms and are together worth $180-million.

"On some of the other launch vehicles, there were weight restrictions, which to us equates to a shorter satellite life."

Ariane offered additional advantages, he said.

"Ariane delivers (the payload) all the way to geostationary orbit without requiring an upper stage (rocket).

"With either the Titan or the Long March, we would have to have an upper stage . . . one that has not yet flown. It would have represented an extra element of risk and complexity for us."

The Telesat president said NASA was invited to submit a proposal to launch the Anik satellites, but it could not because of a political decision that the space shuttles would no longer carry commercial payloads into orbit.

Despite the criticisms and concerns, Mr. d'Allest said, he welcomes Telesat's decision to go with the Ariane. "It shows that Canada and European industry can work together in areas of common interest."

The Anik E satellites, which will be used to transmit television, radio, telephone and data signals, are being built by Spar Aerospace Ltd. of Toronto at the company's plant in Ste-Anne-de-Bellevue, near Montreal.

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CSO: 5520/27

GO-AHEAD GIVEN FOR DATA PROTECTION LAW ENACTMENT

Hong Kong SOUTH CHINA SUNDAY MORNING POST in English 29 Mar 87 p 3

[Article by Vicky Wong]

[Text]

THE Executive Council has given the go-ahead for data protection laws to be enacted as soon as possible.

Meanwhile, a code of practice outlining data protection principles which should be observed by Government as well as private sector computer users would be drafted prior to the needed legislation being brought in.

As earlier reported in the *Sunday Morning Post*, a working group on data protection set up by the Chief Secretary in 1984 had concluded that such laws are necessary.

The Government intends to study legislation and codes of practice in use in other jurisdictions in order to come up with a workable framework to ensure data protection in Hongkong, according to Mr Canice Mak, from the Administrative Services and Information Branch.

In particular, the experience and problems encountered overseas in implementing data protection laws would serve as useful guides.

Mr Mak said that government departments which use computer systems are already following data protection principles enshrined in the United Kingdom's Data Protection Act.

The intention is to draft a code of practice which amplifies these principles for issuance to the private sector.

Compliance with the code would be voluntary but would serve as an interim measure to heighten awareness of the need to protect personal data stored in computers.

Trading

According to Mr Con Conway, chairman of the private sector subcommittee of the working group on data protection, the Executive Council's decision would remove a potential threat to the territory's continued economic prosperity by EEC countries.

These countries have signed a data protection convention which gives members with data protection legislation the right to refuse to allow personal information to be sent to other jurisdictions without comparable safeguards.

"Given the threat of protectionism, it's only prudent that Hongkong enacts data protection laws particularly since Japan, the largest trading entity in Asia, is already moving in this direction," he said.

Mr Conway said the code, although voluntary, would also be useful in guiding private sector computer users to meet the statutory requirements of the future since systems would need to be modified or additional features installed before data protection could be ensured.

However, Mr Conway said it might not be possible to include in the Hongkong code one of the data protection principles enshrined in the British legislation.

This particular principle gives members of the public the right to find out what personal information has been filed in government and private

sector data banks on them. Should the information be wrong, they also have the right to have such data corrected or erased.

Without the required legislative back-up, implementation of this principle would be difficult since search fees and a maximum time period for releasing the required information should be standardised if the public's right to have access to such information is not to be frustrated.

For instance, computer users could set search fees at prohibitively high rates or they could take months to provide the required data, both of which are likely possibilities since the present system does not facilitate such searches, Mr Conway said.

Moreover, much thought would also need to go into how far computer users have to go to correct wrong information stored in their data banks. For instance, a liability to correct only the information stored in their systems would obviously be simpler to effect than if they had to also notify every other organisation to which the wrong data has been supplied in order that errors in these other systems could also be corrected.

Tracing wrong data going out from one system to others would mean that computer users would have to install a "flagging" capability to monitor every entry to enable future trace-backs of where a particular piece of information has gone.

Personal

"Systems are not set up to do this and it would cost tens of millions of dollars to put in," Mr Conway said.

It would be feasible, however, to include the other British data protection principles into the Hongkong code.

These include a requirement that personal information be obtained and processed fairly and lawfully and that it should be held for only one or more specified purposes.

Explaining how this might work, Mr Conway said persons wishing to open a bank account could be required to supply a lot of personal information to back up their applications. However, the bank would not be able to pass this data on to departments handling other matters such as insurance or stockbroking so that they could select which of the bank's clients to target for a direct mail campaign to get new business.

Or, if one Government department has gained access to personal information on earnings for a specific purpose, such as immigration, this could not be passed on to another department such as Inland Revenue which might use the data to track tax dodgers.

Another requirement in the British legislation states that personal data held for any purpose should not be kept for longer than is necessary for that purpose.

Explaining how this might work, Mr Conway said that a bank or a finance house which offers a specific term loan to a client should, after the loan has been successfully discharged, no longer keep the personal information relating to that particular client or his pay-back record for future reference.

For instance, a bank would not be able to rely on a previous unsatisfactory payback record to refuse a future application for a loan.

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CSO: 5550/0124

COMPUTER SYSTEM FOR HONG KONG POLICE UNDER STUDY

Hong Kong SOUTH CHINA MORNING POST in English 1 Apr 87 p 5

[Article by Walter Cheung]

[Text]

PLANS for a multi-million dollar computer system to help police crack down on triad activities and organised crime are being prepared for approval by the Chief Secretary's Committee.

The sophisticated computer for the Criminal Intelligence Bureau might cost between $15 million and $16 million according to present estimates, a senior Government official told the *South China Morning Post.*

This followed a successful six-month pilot scheme which ended last month and a demonstration to Sir David Akers-Jones on February 13.

The official said the computer would provide quicker storage, analysis and retrieval of information on criminals, especially triad members or those involved in organised crime.

The 200-strong CIB is the nerve centre of the police force for the collation, analysis and dissemination territory-wide of intelligence on key criminals and advising on crime trends.

An evaluation of the $200,000 pilot test concluded that the project was worth pursuing and it is now proposed to seek installation of the system over the next two years.

Papers are now in preparation for the Chief Secretary's Committee by the senior assistant data processing manager, Mr Alan Dixey.

If the committee gives the green light, detailed proposals including the exact costs will be worked out to seek funds from the Finance Committee.

As criminals are becoming more sophisticated, the police force has turned to high-technology to combat crime, and there has been a steady expansion in the use of computers within the force.

The Commercial Crime Bureau and Kowloon region now have a number of microcomputers to aid investigation into major crimes.

Eight microcomputers have been obtained for the regional intelligence units and selected district intelligence sections to improve their storage, retrieval and analysis of information on criminals and crime patterns.

The benefits of all these computer facilities are being evaluated to determine if expansion is necessary.

A further 12 microcomputers have been installed in the Commercial Crime Bureau, the Organised and Serious Crime Bureau, and the Kowloon Regional Crime Unit to aid major crime investigations.

The Commissioner of Police submitted requests to the agency for a total of 70 microcomputers last year.

Preparations continued for the introduction of a personnel and training computer system to improve the maintenance of personal records and to aid management in career planning and resources deployment.

This system will benefit the personnel and training wings.

/9317
CSO: 5550/0128

STATIONS, SCHOOL ENGAGED IN SATELLITE RESEARCH

Hong Kong HONGKONG STANDARD in English 8 Apr 87 p 8

[Text]

TWO television stations and the Hongkong Polytechnic have set up their own roof-top satellite dishes for research and teaching.

The University of Hongkong is expected to follow suit in the next few months.

The research work, into improving satellite television reception equipment, is expected to reduce costs for Hongkong viewers.

The Chief Engineer of Asia Television Ltd (ATV), Mr Lam Sai-cheong, said a four-metre dish manufactured in China, costing about $50,000, was erected at the station's Broadcast Drive studio.

He stressed that ATV is merely studying the technology involved and would not rebroadcast the programmes they receive via satellite.

A spokeswoman for Television Broadcast Ltd (TVB) said it receives programmes from the Direct Broadcasting System of Japan via a roof-top dish at its Broadcast Drive studio.

A principal lecturer with the Polytechnic's Department of Electronic Engineering, Dr Li Kam-chi, said their 4.6-metre dish antenna was on loan from a local company.

It was erected three months ago at the Polytechnic's Hung Hom campus.

"We will look for ways to lower costs, improve reception capability and signal processing and perhaps to produce smaller and lighter dishes," said Dr Li.

Dr Li said satellite transmission will be included as a separate topic in the curriculum for their students.

Television programmes from America, China, Thailand, Indonesia and the Soviet Union can be received using the antenna, he said.

A lecturer with the Electrical and Electronic Engineering Department in the University of Hongkong, Dr Ho Ka-leung, said the decision to tune into weather satellites was made four years ago.

About $400,000 was needed at that time for the equipment and the project had been delayed, he said.

The price has now dropped to about $100,000 and the department plans to erect the dish at the university's Pokfulam campus within the next few months.

"We think the students will appreciate the technology better if they see how the equipment operates," he said.

It is not known how many satellite dishes have been put up in Hongkong. But it is believed that only a handful of individuals or organisations have done so, as they cost at least $50,000.

Cable and Wireless (Hongkong) has a monopoly for external telecommunication services — including satellite television transmission — that forbids other parties, including television stations, from distributing satellite television programmes for commercial purposes.

The Kowloon Hotel applied last year to beam satellite television into its guestrooms through its own roof-top dishes. The Government has yet to decide on the matter.

/9317
CSO: 5550/0127

BATTLE FOR CABLE TELEVISION FRANCHISE CAUSES CONCERN

Effect on Telecommunications Industry

Hong Kong SOUTH CHINA MORNING POST in English 6 Apr 87 p 9

[Article by Peter Robinson]

[Excerpts]

THE very public battle for the cable television franchise in Hongkong has succeeded not only in generating a debate on the future of television but also, more significantly, on the development of the telecommunications industry.

It has been a mainly two-cornered fight so far between two heavyweights, although six other parties have expressed an interest to the Government in running some form of service or in operating channels.

But the confrontation between the Hongkong Telephone (Telco) consortium – Cable Television Hongkong (CTHK) – and Hutchison CableVision has had the virtue of encapsulating the major issues: should Telco have the monopoly in providing telecommunications networks, and what role should cable television play in relation to the present broadcasters?

The two companies normally adopt a fairly low profile as far as the press is concerned but they have been playing the media game for all their worth to put forward their claims for cable television licences.

The press is used to such fair-weather friends and the verbal tussles are highlighting the issues.

Much of the publicity has centred on the issue of who should provide the physical networks for cable television. However, cable television will stand or fall on the issue of programming, and in this area fundamental differences in philosophies have emerged.

Hutchison CableVision wants to take on the broadcasting companies with Cantonese dramas as well as providing minority programming. CTHK says that there is no point in providing the same material as the off-air broadcasters and aims to concentrate on filling the gaps with minority programming. CTHK's local production will be on a much smaller scale and mainly community based.

Cable programs could have far-reaching effects on the established broadcasters, ATV and TVB. If cable provides Cantonese dramas this could threaten TVB's undisputed lead in this area and cable's English language programs could even eliminate the need for ATV and TVB to provide English channels.

Neither cable company appears to have any intention of going for much English language local production. This is an area in which the broadcasters are often roundly criticised since most of their programs are imported and the outlay on English language programming is hardly profligate.

Perhaps this is a role Radio Television Hongkong (RTHK) can develop but, despite a strong programming team, it has been handicapped by scant resources and the refusal of the broadcasting companies to promote its documentaries.

A point often overlooked is that over 90 per cent of the audience for the English language channels is bilingual Chinese -- it is not a matter of spending millions on a wailing expatriate minority.

This bilingual crossover audience is important; what it lacks in numbers it makes up for in spending power. In other words, it is very attractive to advertisers.

The chairman of the Association of Accredited Advertising Agents, Mr Tony Blair, said advertisers would be interested in cable television, although it could not hope to achieve anything like the viewing figures of the broadcast channels.

He said it would offer the opportunity of zeroing in on special interest groups for particular programs.

For instance, in the print media, trade journals are popular with advertisers because they allow them to directly reach people interested in particular product areas. Similarly a sports program on yachting, or a program on photography, will allow advertisers to target the people most likely to buy these or related products.

Mr Blair said that cable advertisements were likely to be on

a far smaller budget than broadcast commercials. The print media could also face competition in the classified advertisements market.

It was the Broadcasting Review Board report, with its comments on the desirability of the territory having cable television, which set the ball rolling.

Telco acted quickly, seeing the opportunity for providing the wide band network needed for cable television, which would also be able to carry other telecommunications services. Telco put in its application before the Government had even considered the issue.

Mr Melvyn Sears, general manager of Hutchison CableVision, claims Telco wanted to "get it on the nod, before anyone else realised that it was an issue".

A survey Telco commissioned by AGB McNair had confirmed that such a service could be viable and so Hongkong Telephone went ahead with its unsolicited application to the Government.

At one stage it seemed that Telco was going to be granted the licence "on the nod". But the Government was aware of the larger issues – that being the telecommunications network provider did not necessarily mean that Telco should also be responsible for the wide band network for cable television.

Since Hutchison CableVision has made it clear it has no wish to be a program provider on a network operated by Telco and that it wants to provide both itself, its application has forced the Government into reviewing the whole issue of Telco's monopoly on telecommunications networks.

The applicants had been under the impression that the Government would lay down the tendering conditions by May with licences granted by the end of the year – and even this would be behind the original schedule.

But the Secretary for Economic Services, Mr John Yaxley, revealed to *South China Morning Post* earlier this year that since cable television has opened up the issue of whether telecommunications should be further liberalised, the issue of the cable television licences will take much longer to consider than anticipated. It looks highly unlikely that licences will be granted this year.

The Government has found it has a lot of learning to do itself before being in the position to make decisions on cable television. To this end, Government officials have made a number of overseas visits to cable television installations.

The monopoly enjoyed by Telco's parent, Cable and Wireless, in receiving satellite signals has also been challenged from another cable television applicant, the US-based, Hongkong Satellite CATV.

Cable and Wireless has satellite transmission receiving rights until the year 2006. But Hongkong Satellite wants to launch its own satellites to beam programs over here. The Post Office says that Cable and Wireless has exclusive satellite rights at present. However, if the Government saw fit, in its general review of telecommunications, it could amend this through the Governor in Council.

The managing director of Hongkong Satellite, Mr Noah Mandell is a colourful figure, reflected in his submission to the Government which, along the way, even incorporated a reference to kung fu ideals. He has been involved in cable systems in the US and satellite systems, and has recently signed a deal with Terasat Inc of the US to develop satellite services to the Pacific Rim area.

Even if he is not granted a licence he still wants to provide satellite services to companies here.

The other five cable television applicants have been keeping a profile that varies from the low to the near-invisible during all the wrangling.

Mr Robert Chua, originally a Hutchison consultant, said he was interested in running his own single channel working with whoever gets the network.

Reuters says its application is more a case of putting a foot in the door in case it wants to provide an information channel at a later date. Over at Discovery Bay, the Hongkong Resort Co wants to provide cable television for its Lantau residents.

The other two, China Vision Canada Corpn and Alpha Omega Broadcast of the UK, are conspicuous only for the lack of any information about them, and the Government says the all applications are confidential.

The argument over Telco's monopoly in networks became more heated and to a certain extent more ironic when British Telecom took its 40 per cent stake in the Hutchison consortium.

Arrogance

Ironic because until a few years ago British Telecom had the monopoly on networks in the UK, and it was Telco's parent, Cable and Wireless, which broke that monopoly with its Mercury network, despite opposition from British Telecom.

The departing Far East Director for Cable and Wireless, Mr Rod Olsen is at pains to point out that this move was instigated by the UK Government. At that time both companies were Government owned.

Cable and Wireless lays great emphasis on its subsidiary here being a Hongkong company whereas the Hutchison consortium includes British Telecom.

However, investors might be more happy if Cable and Wireless would therefore go the whole hog and float Cable and Wireless Hongkong here rather than listing the UK-based group here, since the Hongkong-based Far East operation is the greatest contributor to the group's profits.

While Telco's consortium, CTHK, is pressing ahead with an interactive network for cable television, Hutchison CableVision's thinking is more long term and includes such interactive services as home banking, home security, and a host of other screen based services.

There are those who think that Telco has had it too easy too long on the network side and certainly the company does sometimes betray a sense of self-righteousness. Criticisms are invariably dismissed as ill-informed with the flippancy and arrogance of the monopoly holder.

Mr Olsen of Cable and Wireless denies that the Hongkong Telephone subsidiary has a mo-

nopoly in effect since its telephone network charges are laid down by the Government under a scheme of control.

He said that if there was free competition in networks, charges would probably rise at a much faster rate. Competition would stop cross-subsidisation of services and the cost of residential services would probably rise the most.

But BT, also a monopoly holder on networks until a few years ago, is also heir to some of the same difficulties as Telco.

There was a precursor to the battle between Telco and the Hutchison CableVision consortium a couple of years ago when another Hutchison Whampoa company, Hutchison Telephone, challenged Telco's monopoly in cellular radio – and won.

Telco took legal advice and fought all the way before being over-ruled by the Government. Yet now Telco publicly makes a virtue out of the fact that Hutchison is able to interconnect its cellular radio system into its general telephone network. It omits to mention that this was only under duress.

Some say that the competition for licences for cable television is really all about the wide band network and the other screen-based interactive services that can be provided on the network.

However, both companies rigorously deny that cable television is just a loss leader and claim that cable television in itself can be profitable.

Both companies aim to "pass", to use the jargon of the trade, about 1.5 million homes with their network over the next five years. It remains to be seen how many of the homes passed take the service. Hutchison appears to pitching its charges lowest, probably as little as $60 a month for the basic service, in order to attract a high volume.

Telco has been doing its best to distance itself from CTHK and the programming side of cable television, laying the emphasis on the network.

It announced early this year that within a week another shareholder would be brought into the CTHK consortium and it would dilute it stake. However, since then the company has remained strangely silent on the subject.

There have been rumours that both Australian tycoons Mr Alan Bond and Mr Rupert Murdoch are keen to take a stake in cable television here, especially after their recent forays into the territory.

Commercial television in the UK was once described as a "licence to print money"; the potential for cable television and telecommunications in Hongkong is just as enticing.

Public Duty Considered

Hong Kong SOUTH CHINA MORNING POST in English 7 Apr 87 p 20

[Editorial]

[Text]

SOME years ago, the Malaysian government, with encouragement from a United Nations agency, decided to install outdoor communal television sets in kampongs, not only for national propaganda purposes but to provide public entertainment after dark in hopes of keeping the birthrate down. It is recognised that high birthrates in rural areas of under-developed countries stem in part from boredom. A year or so later, a conference evaluated the results of kampong community TV – and found the birthrate had gone up because children were sent to watch television in the centre of the village, thus increasing parental privacy.

Several useful lessons can be drawn from the above, apart from the importance of quality programming. The most striking lesson is that unanticipated and opposite effects sometimes result from the most well-meaning schemes.

No one is suggesting that the inevitable introduction of cable television to Hongkong will increase the birthrate. But the new information technology, of which cable television is part, will bring unanticipated social and economic consequences. These will have a considerable effect on Hongkong. This is of more than usual import because Hongkong is not only a society in transition but one in which the government is to change in 1997.

While the existing government may be forgiven a certain lack of expertise regarding the technical, economic and programming implications of cable television, the Hongkong Telephone Company seems to have behaved rather like the classical monopoly resistant to new technology and determined to hold on to profit margins.

As recently as January 1985, a company spokesman said Hongkong had "limited potential for cable television" but added that Telco should have sole rights if anything was launched. Hanging on to profit margins is an honourable tradition in this town, but holders of exclusive public franchises, like Hongkong Telephone, have some obligations to the public interest which may pare these margins.

The threat of competition soon caused Telco to develop a more positive view of cable television. However, the record of statements and plans by the company over the 27 months since January 1985 could be compared to a dentist pulling teeth. Already bruised from its battles with Li Ka-shing's cellular telephone company, Telco and its parent, Cable and Wireless, were jarred from their complacency about cable television by a formidable challenge mounted by a consortium, Hutchison CableVision, in which British Telecom is the second largest partner.

It should also be recognised that nothing major is likely to transpire in the economic life of this territory over the next decade without a tacit review, or even a very indirect request for participation, by the People's Republic of China and its major entities.

Certainly the Government or Telco must display a degree of sensitivity to China's views on advanced telecommunications technology. Since the subject is

sufficiently complex for the Hongkong Government to delay granting a licence or licences, it would not be surprising to find that China has no public views on the matter — for the moment.

Hongkong's population density, and the availability of established conduits and rights of way, either from Telco (which has advanced fibre optic cables throughout much of the territory) or Hongkong Electric (part of the Li Ka-shing empire) which plans shallow trench digging in Kowloon and the New Territories, seem likely to make the capital costs of a cable television system significantly less on a per household basis than in the US for example. The costs are still high — but the profit potential could be in the billions.

This profit potential could interest an aggressive and competent PRC agency like CITIC. Programming for what could be up to 140 or so channels presents political and social problems. Apart from local programming in Cantonese or Mandarin, with the globe-girdling Intelsat network, and a new Western Union satellite to be launched by China next spring, Hongkong should be able to range the world for programs from satellites at modest cost. Whether a Moscow newscast will be permitted on air along with the BBC and Mr Ted Turner's Cable News Network from Atlanta, remains to be seen, but it is technically possible.

Hongkong should encourage this diversity, and let the competing consortia figure out what they can afford. The best for the people of Hongkong is to establish even greater diversity in their sources of information and entertainment, and to keep the costs down to a minimum.

/9317
CSO: 5550/0126

TELEPHONE CHARGES EXPECTED TO RISE WITH COMPETITION

Hong Kong SOUTH CHINA MORNING POST in English 30 Mar 87 p 6

[Article by Peter Robinson]

[Text]

INCREASED competition among local telecommunication networks could lead to higher phone bills, warned the departing Far East director of Cable and Wireless, Mr Rod Olsen.

Mr Olsen said residential charges would probably have to be increased if a second network was allowed to enter the market.

Hongkong Telephone, a subsidiary of Cable and Wireless PLC, is fighting a bid by Hutchison CableVision to provide a wide band telecommunication network which includes cable television.

Mr Olsen claimed that Hongkong Telephone's franchise to operate the local telephone system did not amount to a monopoly as tariffs were regulated by a Government scheme of control.

He pointed out that in the US the split up of the Bell companies, and the separating of international dialling from them, ended cross-subsidy and had resulted in an increase in local charges.

In Hongkong profits from international dialling allowed cross-subsidy for residential lines, he claimed.

"No other territory in the world the size of Hongkong has two networks. Choice is not necessarily a good thing if it means higher costs.

"British Telecom, which is part of the Hutchison CableVision consortium, wants the Government to tear up its network franchise with Hongkong Telephone. However, governments do not get a good reputation by tearing up agreements they have made."

But Mr Olsen did agree that the existing agreement covered voice telecommunication and did not necessarily apply to data and pictures, though all three of these areas were often inter-related in modern telecommunication products.

He said that although a second network might not legally invalidate the agreement, "morally and emotionally it would be tearing up the paper of the licence".

Mr Olsen disclosed that Viacom, consultants to the Hongkong Telephone cable television consortium (CTHK), was to exercise the first of its equity options soon for a small stake in CTHK. It would then have an option for a further equity stake at a later date.

CTHK is negotiating with a number of other Hongkong companies to take a stake in the consortium. Hongkong Telephone will then dilute its stake which stands at around 40 per cent.

While he admitted that cable television could be a profitable service in Hongkong, to be viable the operator had to also run the network and provide other wide band screen based services.

Mr Olsen also dismissed rumours of Cable and Wireless PLC floating its subsidiary.

He claimed that with the listing of Cable and Wireless PLC last year, and the Hongkong Telephone listing "it would only confuse the market if there were three companies to invest in".

On Wednesday Mr Olsen, formerly managing director of Hongkong Telephone, takes up the position of finance director for Cable and Wireless in London.

Mr Eric Walker, who retired as managing director of Hongkong Telephone two years ago, returns to take Mr Olsen's place on April 1.

/9317
CSO: 5550/0125

POSTS MINISTER KARASAWA, YEUTTER DISCUSS KDD ISSUE

Tokyo KYODO in English 0837 GMT 22 Apr 87

[Text] Tokyo, April 22 KYODO--The government will welcome an application from Japan's proposed new telecommunications enterprise for permission to lay a transpacific optical communications cable once two rival firms now competing for a single telecommunications license reach a merger agreement, Posts and Telecommunications Minister Shunjiro Karasawa assured U.S. Trade Representative Clayton Yeutter Wednesday.

Karasawa gave the assurance when Yeutter told Karasawa during an hour long meeting here that the United States attaches much importance to the question of the transpacific cable.

U.S. firm Pacific Telesis International Inc is a member of one of the competiting consortia, International Digital Communications Inc (IDC), which is anxious to secure a share in the laying of the cable.

Karasawa also told Yeutter the ruling Liberal Democratic Party (LDP) is preparing to submit to the Diet a bill designed to liberalize international Value-Added Network (VAN) telecommunications services.

The VAN service allows otherwise incompatible computers with different data languages to communicate with each other, but at present is only available to a restricted number of firms operating in Japan.

The LDP bill is intended to amend Japan's telecommunications law, allotting to aspiring firms a specific VAN identification number which will allow them to link their information systems with U.S. and European firms participating in the VAN network.

Yeutter also told Karasawa he believes Daini-Denden Inc, which plans to introduce a car-telephone system developed by U.S. firm MOtoroal Inc, has been unfairly allotted a market area west of the Kansai region where demand is relatively low.

The Ministry of Posts and Telecommunications has outlined plans to geographically partition the Japanese car telephone market into eastern and western regions by introducing two different cellular telephone systems.

The Ministry proposes to allow a corporate group led by Teleway Japan Corp to introduce to the lucrative western region including Tokyo and Nagoya a car telephone system developed by Nippon Telegraph and Telephone Corp (NTT).

In response to Yeutter's concern, Karasawa said his ministry would do its best to see that both the Daini-Denden and Teleway groups are successful in their efforts to develop the Japanese car telephone market.

/9317
CSO: 5560/085

AR SYSTEM DEVELOPMENT, SALES AT BHG COMMUNICATIONS ENGINEERING ENTERPRISE

Budapest HIRADASTECHNIKA in Hungarian No 1, 1987 pp 17-21

[Article by Bela Balogh and Istvan Gati, BHG Communications Engineering Enterprise, Developmental Institute: "The AR Product Family at the BHG."
Manuscript received 18 August 1986.]

[Text] Summary
With the completion of the AR telephone exchange system it is suitable for a continuation of the automation of the national network until the spreading of electronic exchanges. The article describes the parameters of the exchange types of the system, the adaptation work done at the BHG and the independent developments connected with the type.

The Necessity of Purchasing a License

In 1968 the BHG signed a license contract for manufacture of AR type telephone exchanges. On this basis we manufacture a large capacity subscriber exchange, the ARF-102, two types of transit exchanges, the ARM-201 suitable for handling large volumes of traffic and the smaller capacity ARM-503, and the ARK-511 and ARK-522 used as terminal exchanges in rural networks.

The contract makes it possible for us to manufacture all the parts of the AR type with a few exceptions which Ericsson, the firm selling the license, produces itself. Until the contract expires we can obtain the items purchased abroad through the mediation of this firm. Together with the license purchase the Hungarian Post Office also ordered a significant number of exchanges from Ericsson. Ericsson designed the circuits fitting into the Hungarian network and the BHG obtained the manufacturing documentation for them.

A need appearing in our country and in the socialist countries made necessary the purchase of the license and thus a replacement of products. In the 1960's these countries began national introduction of long-distance dialing, which also involves an expansion of the automation of local networks. The rotary types manufactured by the factory were suitable for development of small and larger capacity local or long-distance networks but in many respects they could no longer compete with the crossbar types.

With the territorial growth of large cities even the distance between local exchanges increases. The direct current pulse transmission of the selection

signals between exchanges is not reliable for greater distances with the rotary system.

The MFC signal exchange used with the AR system is substantially faster and it makes possible reliable signal exchange even in the case of greater distances. The transmission of information is fast because one number is represented by simultaneous transmission of two out of six tone frequencies and it is reliable because the initiating exchange sends the two frequencies until two other frequencies are received from the target exchange as a response. With swift signal transmission, naturally, the holding time of cables linking exchanges decreases.

The difference is even more significant if we compare the rotary inter-exchange with the ARM. Realizing subscriber long-distance selection requires an inter-exchange from which one can build an exchange with large volume and large line capacity, which ensures full accessibility of the lines, which has four wire switching and which makes connections quickly. The ARM type does all this, but the same conditions cannot be met with a rotary system because of the small capacity rotary machines and the direct current control.

Although the interests of the manufacturer are secondary to those of the customer and user, we must still mention that because of its design the rotary system was not suitable for larger scale automation of manufacture, so replacing the specially trained and manually dexterous workers represented a constant problem.

Adaptation Work

Adapting the documentation received with the license and organizing manufacture represented very great tasks for the BHG. The products of the factory before the license purchase were not in harmony with one another because they were of different origins. We manufactured exchanges of Antwerp, Soviet and our own design. Since these were the products of different firms their manufacturing documentation, the degree of standardization of the products and our processing methods were not uniform.

When manufacture of the AR type began we could not immediately abandon manufacture of the earlier types so the existing organization of the factory had to be taken into consideration in the adaptation. This represented significant extra work and it was not possible for us to take over every advantageous method. So when developing manufacture we had to introduce the processing based on the processing machines of the factory and used for the other products. We could not reorganize the computerized wiring documentation preparation method because at that time we had neither the computer nor the suitable personnel.

We did the adaptation in several steps and in the fourth year we already delivered an exchange, but we still purchased a significant number of parts for it.

In the beginning manufacture was done in a factory unit set up in the area of the parent factory but manufacture is now done in factories established in the

provinces, the capacity of which makes possible the production of 200,000 line worth of AR exchanges per year.

Simultaneously with the work of adopting the product we had to organize training for various purposes in our own school and we participated in various courses there.

One very significant goal of our training work was to prepare users to introduce the AR type. This was necessary especially in areas where the network was built up of direct control exchanges without registers. In these countries we participated in the work of designing the network and we jointly assembled the technical conditions. Our goal was to realize the advantages of an AR system even in networks which also contained older type exchanges.

On the basis of long years of experience we can now state that the license purchase and the adoption of the AR type were successful. The system is uniform; that is, the structure, basic circuit connections and manufacturing and maintenance methods for all three types of exchange, ARF, ARM and ARK, are the same, which is a great advantage for both manufacturer and user. Neither we nor the telephone industry of the socialist countries could have undertaken to develop such a uniform and complete system independently.

Chief Characteristics of the Types Manufactured
The ARF-102 is an urban telephone exchange which:

--is suitable for serving several tens of thousands of small and large traffic subscribers;

--works with an MFC signal system based on forced coupling in controlling switching within the exchange and leaving the exchange;

--has flexible routing including alternative routing possibilities;

--makes possible use of push-button telephone sets (decade and MFT);

--ensures the swift creation of a connection and reliable operation;

--requires inexpensive maintenance; and

--cooperates with telephone exchange using any system, with the aid of suitable interface circuits.

The circuit diagram of the exchange can be seen in Figure 1.

The ARM-503, ARM-201/2 and ARM-201/4 are transit telephone exchanges which provide:

--4 wire switching,

--complete flexibility in numbering, routing and billing,

--full accessibility in any direction,

--the possibility of detour routing, that is direct and four detours,

--high speed switching and reliable operation,

--the possibility of adaptation to existing signal systems and cooperation with other exchange systems,

--use of an MFC signal system based on forced coupling,

--a multiple accounting possibility,

--building up of small capacity transit exchanges (40-600 terminal) in the case of the ARM-503, medium capacity transit exchanges (max. 4,000 terminal) in the case of the ARM-201/2 and large capacity transit exchanges (max. 16,000 terminal) in the case of the ARM-201/4; and

--the ARM exchange provides control of ARM terminal exchanges of rural networks in addition to transiting the traffic of independent local exchanges.

The registers and code transmitters of these exchanges are also concentrated in the ARM exchange.

The ARK-511 and ARK-522 are rural telephone exchanges which provide:

--automatic telephone traffic of smaller and larger settlements through the connected higher order exchange,

--use of an MFC signal system based on forced coupling,

--flexible routing including an alternative routing possibility,

--the possibility of connecting push-button telephone sets,

--unsupervised maintenance,

--passing on alarm signals to the higher order exchange,

--building up small capacity rural terminal exchanges (max. 90 subscriber) in the case of the ARK-511 or medium capacity rural terminal exchanges (max. 2,000 subscriber) in the case of the ARK-522, and

--the possibility of exchange expansion.

The circuit diagrams of the exchange can be seen in Figure 2.

Factory Developmental Work Connected With The AR Type
Coupling to networks of other types:

With the beginning of manufacture there appeared as customers, in addition to the Hungarian Post Office, the post offices of the GDR, Czechoslovakia and Poland. Later Cuba and Yemen expanded the circle of our customers. With the

ARF-102 type we expanded and later replaced the local network in Cracow. We also used the ARF to expand the Havana and Yemen networks.

In the GDR and Czechoslovakia the ARM-201/4 exchanges are being used to build up the transit plane of the national network. For these orders the AR exchanges had to be coupled to various exchange types, such as Siemens, Strowger, Pentaconta and AGF500, and to transmission equipment using different signal systems. When cooperating with exchanges of another type the task is that the AR exchange must receive and transmit the inter-register signals serving to transmit the line signals used at the connecting exchange, such as busy, answer, hang-up and number information.

The line signals can be transformed into the line signals used in the AR with the incoming trunk circuit and, in the other direction, with the outgoing trunk circuit. To transmit selection signals differing from MFC it is necessary to use a code transmitter of a new design, or a code receiver or incoming register in the case of reception. The register systems of both the ARF and ARM make possible the connection of several different code receivers and transmitters to the same register. So we did not have to modify the basic type in carrying out the coupling tasks; rather, we had to design supplementary circuits.

It also facilitated the use of the AR model in different networks that the circuit units providing control have wired programs. The program of the circuit can be changed by resoldering the program plug belonging to the circuit. So the same circuit can be used in a changeable way, which is advantageous for manufacturer and user, but the program connections of every exchange must be designed separately.

The ARF-102 "MOBIL" Telephone Exchange

This is a local exchange with a capacity of 1,000 subscriber lines which can be used as an independent main exchange in smaller settlements, as a subexchange for an ARF exchange in an urban network or as an outlying thousand stage unit. Its great advantage is that it is put into a container housing as a finished exchange at the factory. So it can be shipped to the site where the container serves as the exchange building. It provides maintenance free operation since it sends error signals to the higher order exchange.

Very many firms, including Ericsson, have created local exchanges built into containers. In general they offer them for temporary use, for example to provide temporary and swift telephone service to new housing developments. In our country, in addition to this, the development of this type is justified under other circumstances as well. Authorizing and constructing buildings for new telephone exchanges takes a very long time, and the costs develop proportional to the time. So installation of an exchange placed in a container, as an authorized building type, offers a faster and cheaper solution. Beside this the possibility of mobility is of only secondary significance and will probably be used in only a few cases.

The Combi X Type Subexchange

The BHG has achieved significant success with the CA type crossbar subexchange family, an independent developmental achievement of the 1960's. So at the time

of the license purchase we did not take over the documentation for AR type subexchanges but rather continued to manufacture our own subexchange types. The CA family, however, lacked a large capacity type for several thousand lines. Since we did not want to further develop the CA subexchange family we developed a large capacity exchange type on the AR design using the principles used in the ARF.

The exchange can be used most advantageously as a subexchange connected to an ARF since in this case the extension phones can be reached from the national network by an automatic call without an operator. In addition to the traditional subexchange services it also has the most modern services such as:

--abbreviated calling,
--call re-routing,
--conference conversations,
--dial-in tandem connections,
--push-button number input, etc.

It can be used as a mixed exchange; that is, one can connect Postal main phones together with subexchange extension phones, and it can be used as a centrex exchange serving several enterprises.

CLB Telephone Line Extension Adapter
The CLB telephone line extension adapter is suitable for connecting subscribers or decadic work stations distant from an automatic telephone exchange to a main or subexchange using any system (crossbar, rotary, etc.) on 2 wire amplified or unamplified or 4 wire lines.

Stored Program Controlled Operations Monitoring and Maintenance Systems
The purpose of the stored program controlled operations monitoring and maintenance systems under development at the BHG is to provide services making possible the centralization of maintenance and increased efficiency, in a modern, uniform system, for traditional (7A2, ARF) subscriber and transit exchanges which will coexist with a digital TPV [stored program controlled] switching system.

As a first step in the development we have already produced, in part, microprocessor controlled integrated test and monitoring terminals for crossbar system subscriber and transit exchanges. With their own peripherals these make up an independent system but it is also possible to connect them to a data transmission net, thus creating a possibility for remote data processing.

As a second step in the development we will develop a uniform, computer controlled remote data processing system for the integrated test and monitoring terminals in accordance with the principles of a programmed maintenance system to serve national or smaller geographic units.

Breakdown of Product Types by Market and Volume As of the End of 1985

Market	(thousands of lines of) ARF	ARM	ARK	MOBIL	COMBI-X	ARL 21	Total
Hungary	406.7	234.9	57.4	71.7	13.5	24.8	809.0
Czechosl.	--	228.2	--	--	--	--	228.2
GDR	--	209.5	--	--	--	--	209.5
Poland	90.7	--	--	--	--	0.1	90.8
Cuba	46.1	53.4	--	--	--	--	99.5
South Yemen	--	--	--	12.3	--	--	12.3
Total	543.5	726.0	57.4	84.0	13.5	24.9	1,449.3
Percent	37.5	50.1	4.0	5.8	0.9	1.7	100.0

The Future Role of the AR Type Exchanges

It appears from a description of the chief parameters of the uniform product types that the AR type crossbar exchanges manufactured by the BHG still correspond to the requirements made of them.

The general opinion which had developed concerning the Hungarian telephone network is not what it is because the AR exchanges did not come up to expectations. The root of the problem is in the quantitative shortage. An improvement in the quality of the Hungarian telephone network can be realized only with intensive network development.

The manufacturing capacity created at the BHG--200,000 lines per year--is capable, quantitatively and qualitatively, of providing the necessary equipment for the customers who will appear over the years until the appearance of digital systems.

The AR product still has services which so far have not been exploited, such as the alternative traffic routing system (in Budapest) which:

--results in a more economical, cheaper network,
--is less sensitive to deviations from estimated traffic,
--makes possible larger periodic expansions of the circuit bundles, and
--provides greater reliability and longer life.

And one might mention, for example, the possibility of using push-button phones, which means simplified operation for the subscriber and reduces the switching time by using a swift method of signal transmission.

It is very important to mention the microprocessor controlled operations monitoring system (TIMOS, LIMOS) which can be used on an AR exchange; this system also means a new maintenance philosophy. With this new monitoring system it will be possible to make a qualitative leap in the operation and maintenance of telephone exchanges.

With the appearance of digital main exchanges, obviously, the volume of manufacture of AR type exchanges will decrease, but we should not count on its ending for a long time yet. In addition to setting up new exchanges when expanding networks the existing ones must be expanded also. Nothing justifies

expanding the primarily provincial AR exchanges, which work well and require little maintenance, with exchanges of another type. The AR types can also have a role in coupling to digital exchanges. To a large extent these couplings are temporary and end with automation or modernization of the network. The AR type exchanges or selector stages could be used advantageously to gather the traffic of lines using various signals and pass it on to the digital exchange with R2 signaling.

Biographic Notes

Bela Balogh completed his studies at the Leningrad Military Engineering University in 1956. He has worked at the BHG since 1958. Until 1978 he was a design engineer or department chief. Between 1978 and 1984 he was chief of the main department dealing with adaptive development of the AR equipment and a chief engineer in the BHG Developmental Institute. Since 1985 he has been product director for the AR equipment.

Istvan Gati graduated from the Mechanical Engineering School of the Budapest Technical University in 1950. He began his work at the BHG Communications Engineering Enterprise and has worked there since. At first he worked as a product designer in the 7A2 group and then became group leader here. His group began adaptation of the AR system in 1968. In 1974 it was made into a department under his leadership. At present he is chief of the AR Exchange Development Department and he belongs to the organization of the Developmental Institute.

FIGURE CAPTIONS

1. p 18. The ARF-102 urban exchange and the ARM-201 long-distance exchange.

2. p 19. The ARF-102 remote mobile exchange and the ARM-201 collection node exchange.

8984
CSO: 5500/3016

DATA TRANSMISSION OF THE HUNGARIAN POSTAL SERVICE, PROJECTED SYSTEMS

Budapest INFORMACIO ELEKTRONIKA in Hungarian No 6, 1986 pp 333-340

[Article by Pal Horvath, chief of the switching technology department of the Hungarian Postal Center: "The Status and Development of the Data Transmission Service of the Hungarian Post Office"]

[Excerpt] Construction Principles and Practice of the Hungarian Postal Data Network

The putting into operation of the Hungarian line switched data network (among the first in Europe, in 1981) and the present service development activity of the Hungarian Post Office show that the Post Office recognized the fact that the most effective way to satisfy the quickly growing data transmission needs in the short and medium term was to build a data network. In theory there are two competitors to data network data transmission. One is data transmission over the telegraph and telephone network and the other is data transmission over an integrated services digital network (ISDN). On the one hand domestic teleprocessing has already outgrown the service limitations of these predecessors and on the other hand the serious qualitative and quantitative deficiencies of the telephone network hinder the spread of even those data transmission applications for which the transmission speed, contact time, etc. of the telephone network would be adequate.

And preparations for ISDN in our country are still at such a beginning stage that we can count on it as a possibility in satisfying demand only in the long run. ISDN will not be a self-serving project but rather it will combine in itself all those services which the technology permits and economicalness justifies. So one can imagine that a data network will also exist along side ISDN.

Today the Hungarian Post Office can post as a realistic goal the construction of an integrated digital telephone network (IDTH) and an integrated digital data network (IDA) which exploit the favorable coupling possibilities of digital transmission technology and switching technology. The construction of separate networks for different purposes is justified by the difference in the number of stations, about three orders of magnitude, the difference in transmission speeds used, one or two orders of magnitude, the different network structure and the diversity of data network services and functions. Building the IDTH or IDA is not a developmental detour but rather an important

step in the direction of realizing ISDN. ISDN will come into being--at least partially--through the integration of the IDTH and the IDA.

Having said all this the postal data transmission service development conception can be summarized as follows:

--The data network services can satisfy data transmission needs with good quality;

--The Hungarian Post Office plans to introduce on the data network all three data transmission services defined by the CCITT:

a line switched service,
a packet switched service, and
a leased line service;

--Keeping in mind its own interests and the interests of users the Post Office intends to offer a complete service; that is, it will provide a standard digital interface for subscribers (acquiring and operating a modem will not be the task of the subscriber);

--Good service for subscribers on the data network will be achieved by using reliable telecommunications devices and an operational system aiding the swift elimination of failures; and

--The Post Office will continue to make possible data transmission on the telegraph and telephone networks, within the technical possibilities of these networks; it does not plan a modification of networks not intended for data transmission--primarily the telephone network--in accordance with data transmission requirements; the quality of the data transmission service which may make use of these networks will improve to the extent that the reconstruction of the networks is carried out. In addition the Post Office will make minor corrections; in the case of subscriber international long distance calls originating from Hungary, for example, we are starting to install electronic units which reduce the interference of fee pulse transmission which hurts the quality of medium speed data transmission, videotex and facsimile transmission, and makes these impossible under some conditions.

3.1. The IDA Transmission Technology System

The above principles are realized on an integrated digital data network (IDA). The basis for IDA is a uniform data network transmission technology system which serves each of the three network operation modes mentioned. The so-called data transmission technology network (AAH) uses time multiplex transmission technology tools for efficient utilization of the transmission paths and a central maintenance system, suitable for sounding alarms and for remote controlled tests, takes care of the error free transmission. The AAH is the basic network of the IDA; its mission is to conceal the quantitative and qualitative deficiencies of the telecommunications base network. The AAH uses three chief types of equipment--asynchronous time multiplex equipment meeting CCITT standard R.101 (transforming the fortysix 50 Bd or seven 300 Bd start-stop signal streams into one 2400 bit/s isochronous signal stream),

synchronous time multiplex equipment meeting standard X.50 (transforming twenty 2400 bit/s, ten 4800 bit/s or five 9600 bit/s synchronous signal streams into a single 64 K bit/s combined signal) and synchronous time multiplex equipment meeting standard G.736 (transforming thirtytwo 64 K bit/s synchronous signal streams into a single 2048 K bit/s combined signal). All three devices can be obtained from import. Domestic development of the R.101 equipment is under way. The Hungarian Post Office is urging domestic industry to develop the other two types also. The time multiplex devices of the AAH fit well with one another and with the IDTH in regard to operating mode, interfaces and speeds. The AAH devices can be used to solve transmission problems of subscriber sections, urban network sections and long-distance sections.

A significant part of the plans for IDA are completed. Realization will begin during the Seventh 5-Year Plan. Construction of the IDTH depends on the resolution or moderation of the embargo on stored program controlled telephone exchanges, expected by 1988.

3.2. Additional Steps Taken in the Interest of Realizing IDA
In addition to creating transmission paths for data network switched services the AAH, without substantial additions, provides operating conditions for a leased line service as well.

Supplemented by suitable data switching centers the AAH becomes suitable for line switched service. It is the position of the Hungarian Post Office that the high degree of complexity of the equipment, a domestic need lower than necessary for economical manufacture and the limited possibility for foreign sales do not justify domestic development and manufacture, so it intends to continue to satisfy such needs from import. We already mentioned in point 2 the expansion of the existing NEDIX 510A data center. During the Seventh 5-Year Plan a second electronic telegraph and data switching center will be set up in Budapest and a request for bids for a similar center to be set up in Debrecen is now being prepared.

At present packet switching technology is under a strict export ban. According to certain signs the ban may be eased in 1988. Making use of the experience acquired in connection with an experimental packet switching center developed by the MTA SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences] and set up and tested at the Postal Central Telegraph Office in 1985 and making considerable use of outside resources the Hungarian Post Office is developing a conception for the development of a packet service which takes into consideration the expected user needs and the characteristics of devices which might be used on a public packet net in an ESZR [Uniform Computer Technology System], MSZR [minicomputer system] and HTAF [remote data processing] environment and which includes both domestically developed and imported packet net devices. According to the ideas prior to development of the detailed conception the Hungarian Post Office plans to build, during the Seventh 5-Year Plan, a public packet network controlled from a network control center which will have three centers and include several PADs (Packet Assembly and Dissambly) and packet concentrators.

The volume of papers delivered at the COMNET '85 symposium contains a description of an experimental packet center based on a TPA-70. In it we mention the possibility of cooperation between the experimental system, the telephone network and the line switched data network as an essential property to be realized in the further development of the postal network. The standardization activity taking place in computer technology and telecommunications is creating ever broader possibilities for cooperation among end systems. The fact that data transmission subscribers are tied to some data transmission service does not deprive them of the possibility of using their "openness," in the OSI sense, as a condition for establishing links. The Hungarian Post Office intends, in several ways, to make its "higher" services available in the reference model sense. For example, a message handling service can become truly popular only if it can be accessed from telex, telephone and data networks alike. Figure 3 illustrates the presently existing network level cooperation possibilities within the data transmission service.

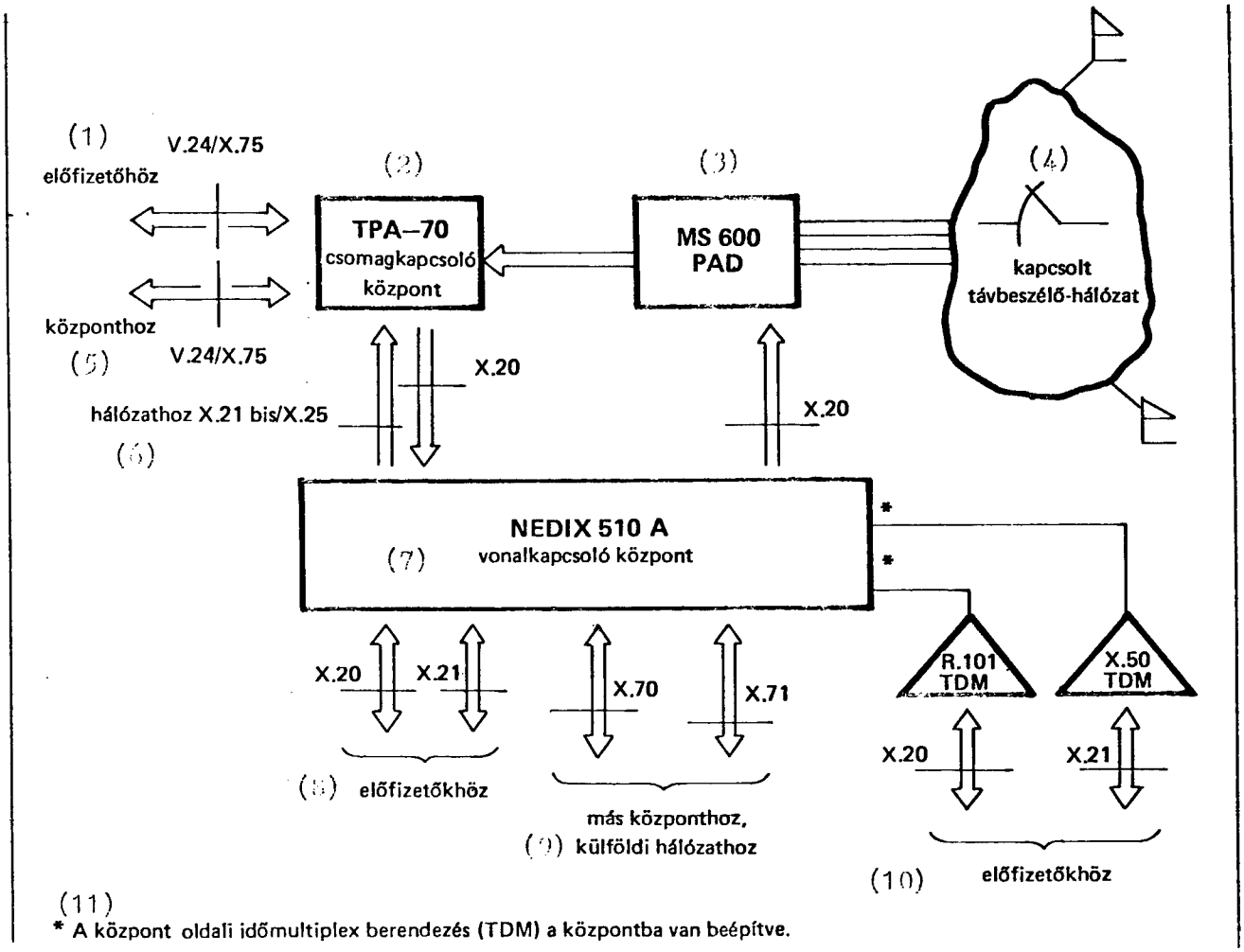
While the possibilities for domestic development are limited in the area of data switching technology, very broad possibilities for domestic developers are offered by the transmission technology for a data network. It is worth dealing with this area because:

--the expertise and technology needed to develop and manufacture modern devices are available in our country; and

--use of domestically made devices could be accompanied by savings in capitalist foreign exchange during data network investments (e.g., when setting up the line switched data network for the NEDIX center the price of the transmission devices linking the subscribers to the center was 55 percent of the total cost of the investment; this ratio is higher when expanding the network).

The Hungarian Post Office--after having prepared lists of conditions for a number of data network devices--came to the conclusion that we must start domestic development and manufacture of data network devices needed in the largest numbers or which are especially expensive. It signed a contract with the Generalplan Small Cooperative for the development and manufacture of an intelligent V/X transformer suitable for V.24/X.20 and V.24/X.21 interface conversions (the NCU, Network Control Unit, according to the terminology introduced with NEDIX) and with the Computer Technology Factory of Videoton for development and manufacture of a medium speed analog DCE (Data-circuit Terminating Equipment) and DCE-C (the DCE on the center end). Since domestic industry is very backward with the development of X.20 and X.21 interfaces for remote processing (TAF) devices, practically all of the data stations now linked to the NEDIX center require an NCU. There are two types of Japanese manufacture, for V.24/X.20 and V.24/X.21 conversion. In addition the DCE at data stations using the NCU is a special one; it has its own internal interface to connect to the NCU but connection to a DTE (Data Terminal Equipment) can be only of the V.24 type.

Figure 3. Simplified Layout of the Present Data Network of the Hungarian Post Office



Key:

1. To subscribers
2. TPA-70 packet switching center
3. MS 600 PAD
4. Switched telephone network
5. To center
6. To network
7. NEDIX 510 A line switching center
8. To subscribers
9. To other center, to foreign network
10. To subscribers
11. Note: The center side time multiplex equipment (TDM) is built into the center.

Unfortunately the present assortment of DCEs is very broad (four types of asynchronous and six types of synchronous DCEs), which makes it difficult to order according to needs and keep inventory at a low level.

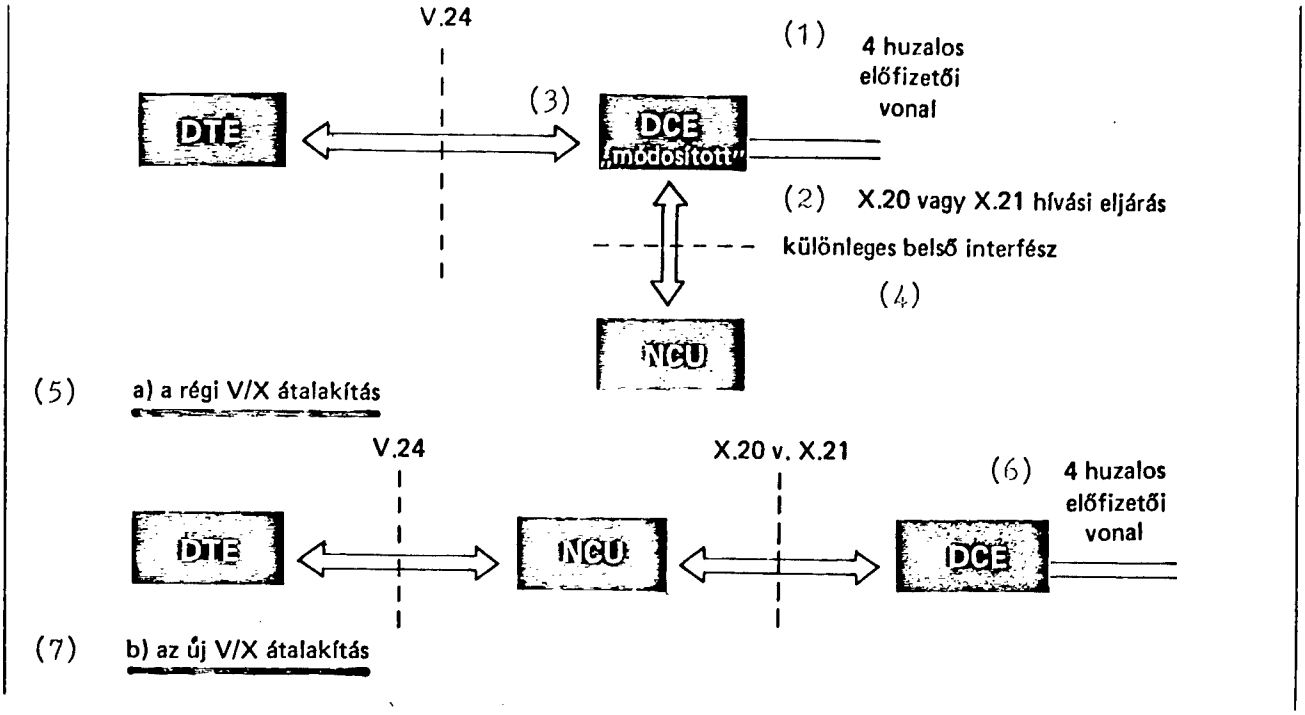
The Hungarian NCU can do everything the Japanese one could, but

--there is only one type, suitable for coupling to both data network interfaces, and

--instead of the non-standard plug into the DCE there is a cascade connection with the DCE through an X.20 or X.21 interface.

So in the future there will be a need only for X interface DCEs in the line switched service (reducing the assortment by half). Switching from a V interface to an X or vice versa depends only on using or omitting the new type NCU. The Hungarian NCU can be used with the X interface Japanese DCEs and can be used in any foreign line switched network. Figure 4 shows the old and the new connection schema.

Figure 4. The Old and New Method of V/X Conversion



Key:

1. Four wire subscriber line
2. X.20 or X.21 call procedure
3. "Modified" DCE
4. Special internal interface
5. a. The old V/X conversion
6. Four wire subscriber line
7. b. The new V/X conversion

The Postal Central Telegraph Office is subjecting five examples of the new NCU to a continuing operational test. If it gets suitable results this type will be used for network development.

The medium speed synchronous analog DCE developed by Videton has brought no less significant system technology innovations. The enveloping technique used in the synchronous subscriber service departments of the data network requires

transformation of the 2400 bit/s subscriber signal stream to a 3200 bit/s and the 4800 bit/s subscriber signal stream to a 6400 bit/s line channel carrier. The Japanese vendor sells these DCEs, containing special speed modems, very expensively and many of them are needed. The type developed at Videoton, in addition to being substantially cheaper, can be characterized by the following advantageous properties:

--a single type for 6400 and 3200 bit/s speeds,

--the DCE makes possible simultaneous connection of two 2400 bit/s DTEs, independently of one another,

--the DCE has both an X and a V.24 interface (in the interest of use in leased line and packet switched services), and

--the digital signal processing technique used makes possible automatic adaptive compensation for line attenuation distortion and distortion of envelope delay; this improves the transmission quality and simplifies the work of installation.

The Hungarian developed NCU, DCE and DCE-C harmonize well with one another making possible efficient fault determination and offering remote control loop generation services. A real novelty is that shortly after the appearance of the CCITT 1984 Red Book it was possible to achieve with this equipment so-called transparent looping which creates cyclically repeating special signal sequences sent from the DTE as described in point 7 of the newest version of the X.21 recommendations.

The cooperation of the Postal Central Telegraph Office and the Generalplan Small Cooperative has given birth to the prototype of a modem which can be used on a two-wire switched telephone network; it is switchable, either 300 bit/s, symmetrical duplex or 1200/75 bit/s, asymmetrical duplex. It is intended to aid the data transmission use of personal computers--hopefully very cheaply but without quality compromises. The modem will go on the market with a V.24 and a C-64 interface. An automatic calling system will be built into a further developed version to be ready by the end of 1986 or beginning of 1987, to satisfy more demanding users. It can be controlled with the generally used circuits of the V.24 interface in accordance with recommendation V.25 bis. By initiating the development and covering the costs it was the purpose of the Hungarian Post Office to offer a cheap and good quality data transmission device for better utilization of personal and home computers, including support for the computer amateur movement--and to head off the appearance of unprofessional home-made devices. (One can connect to the telecommunications network only data transmission equipment tested and authorized by the Post Office.)

The simple version of this "cheap modem" is the basis for the low speed DCE of the IDA. Since at low speeds there is no real difference between the price and size of analog and baseband signal transformers only analog V and X interface DCEs will be put into the net with the domestic device which replaces import. The "cheap modem" which also contains an automatic calling function

constitutes the basis for a videotex modem which will be used in the public videotex service. The development of both devices begins in 1987.

Again on a postal commission the Generalplan Small Cooperative developed the DAT-1 error rate meter and protocol tester. The device, the size of an attache case, performs the customary error rate and distortion measurement tasks of error rate meters; it has an alphanumeric display and programmable trap conditions and by virtue of a program translating HDLC (High-level Data Link Control) bit sequences into mnemonic code it can be used to monitor data streams. Because of its special instruction set it is suitable for carrying out simpler DTE or DCE simulation tasks. It can be delivered with V and X interfaces. Interruption, outside control and LED monitoring of the interface circuits are made possible by a built-in, exchangeable interface adapter. Its EPROM module can be exchanged so it is also suitable for special testing tasks. This equipment is a basic tool for postal operations activity.

During the Seventh 5-Year Plan it is expected that data transmission operations activity will be decentralized; that is, the regional postal directorates will be brought in to set up data stations and data lines. This will result in an expansion of the instrument inventory, and by then error rate meters will be available from a domestic source. We presume that users' demand for this instrument will be greater than the Post Office's and that they might even be exported.

The satisfaction of the postal initiators and guides of the developments listed above--and of others omitted here primarily for reasons of space--would be truly complete if the developments served the interests of the people's economy, of the Post Office as provider, of the subscribers and of the domestic manufacturers.

4. Introduction of Telematic and Message Handling Services

Preparation for the introduction of telematic services began at the Hungarian Post Office in 1982. As a result of the work done one can expect in the near future introduction of all three telematic services--telefax, teletex and conversational videotex (hereinafter, videotex)--which have been standardized by the CCITT.

Signal transmission between the telecopying machines owned by subscribers to the telefax service is made possible on the public switched telephone network. The primary role of the Post Office is to check the compatibility of the telecopying machines and to issue telefax name lists. The Hungarian Post Office opened the telefax service in 1986 to devices belonging in groups 2 and 3 according to the CCITT classification. Devices in group 1 are already obsolete and group 4 equipment has not yet appeared on the domestic market. Facsimile testing calls are being conducted with a number of European countries at this time (June 1986). What countries it will be possible to open facsimile traffic with depends on the result of these tests. These same test calls also study the conditions for international extension of the public telecopying service (known internationally as BUREAUFAX) introduced in post offices within the country on 1 August 1985. Experiences thus far show that with devices in the third group, which can be regarded as modern under domestic conditions, one can conduct acceptable quality facsimile traffic with

the near European countries; suitable quality traffic with stations in distant European and overseas countries may be possible after installing the pulse noise reducing circuits mentioned earlier. The signal transmission problems affect only calls initiated from Hungary.

The Hungarian Post Office plans introduction of a teletex service on the line switched data network--probably at the end of 1986 or in 1987. Figure 5 shows the protocol structure of the teletex terminals and the group 4 (G4) facsimile terminals. It can be seen that the operation of these terminals is well defined at every level of the open network architecture and that the efforts aimed at harmonizing the operation of teletex and G4 facsimile terminals have been successful. By the end of this decade the domestic teletex terminals may be using the packet switched service of the IDA as well. The Post Office must put into operation a so-called interworking unit (IWU) so that the X.21 and X.25 terminals in the lower three levels and the network services serving them can work together. Here the IWU matches the trunk line signal systems of the line switching center according to the X.71 standard and of the packet switching center according to the X.75 standard.

We will import the terminals needed to operate the teletex service. In the interest of aiding and accelerating domestic teletex terminal development and manufacture the OMFB [National Technical Development Committee] and the Hungarian Post Office have announced a competition. They will give material support to the winners and the Post Office will aid the work with professional advice.

The Post Office plans to do the following in the interest of seeing that domestic telex [as published] subscribers, a small number in the beginning, should find sufficient partners:

--it will place into operation telex/teletex convertors making it possible for telex and teletex terminals to work together (probably not earlier than 1988);

--possibly in 1986 it will connect the Hungarian line switched data network with the DATEX-L network of the German Federal Post Office; experts of the two post offices will jointly solve the transmission technology, synchronization and signal system problems (the most teletex subscribers are in the FRG).

Of the telematic services the videotex service requires the greatest material expenditure. The degree of standardization in this area does not reach that of the other two telematic services and it is not adequately coordinated with them either. These circumstances require special care in the course of preparing for and introducing the service.

One of the key questions of videotex service is the decision of the Hungarian Post Office to use, in the area of display standards, the II syntax of CCITT proposal T.101, the so-called CEPT standard. The experimental videotex system to be obtained must operate at the alphamosaic A4 level and alphageometric C2 level of the CEPT. A possible alternative was following the Prestel type alphamosaic display, but:

--the Prestel display has not become an international standard (the display prescription adopted in the CCITT proposal, which we call the CEPT standard, was taken from the CEPT, the organization of Western European postal directorates, and is compatible from above with the Prestel prescription);

--the restricted character set of the Prestel display does not contain accented Hungarian characters;

--the graphic resolution of Prestel is less than the resolution of the mosaic graphics of the CEPT;

--in the developed capitalist countries Prestel, as a display without prospects and not a CCITT display, is not backed by such significant developmental forces as the CEPT standard;

--the CEPT is used in those states (Austria and the FRG) which will provide us with system technology and organizational models and which are potential equipment acquisition sources; and

--those optimization factors which define the chief characteristics of the Prestel prescription can be regarded as outmoded.

So, taking the above into consideration, the Hungarian Post Office did not think it useful to follow the Prestel prescription. Another factor in the decision was that the CEPT uses, under its display level, at the data link level, a more effective error protection procedure than the parity check error protection of Prestel.

In 1985 the Hungarian Post Office sent a request for bids to potential vendors of an experimental public videotex system. The bids have arrived and have been evaluated and a decision can be expected in mid-1986 and the signing of contracts in the second half of 1986.

The elements of the experimental videotex system to be acquired can be seen in Figure 6. The functions of the several system elements are as follows:

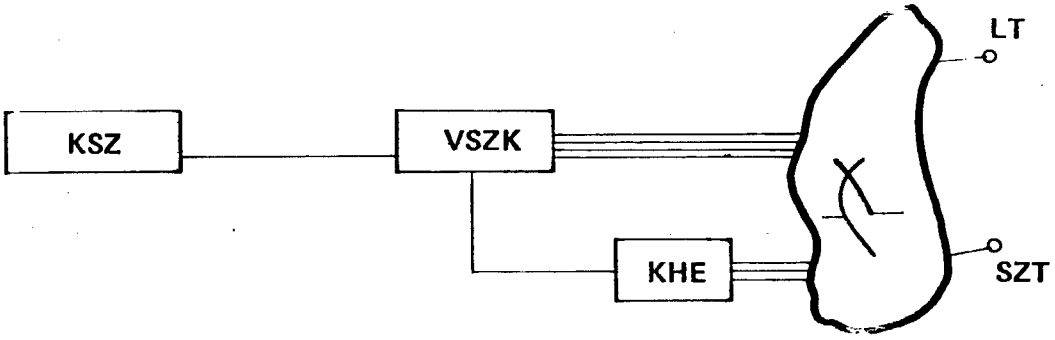
VSZK--videotex service center
A computer operated by the Post Office which provides access to the videotex service and checks access authorization. The usual other functions of the VSZK are:

--supporting users in making use of the desired videotex service (a meta-service);
--collecting charge data;
--preparing statistics;
--managing its own internal videotex databases and other videotex services such as passing on messages and telesoftware;
--gateway functions; this function makes it possible for the users to access through the VSZK the videotex services available on some other computer or in another public videotex service; the activities involved in the gateway function are: selecting the external computer, international connections, protocol conversion and managing the dialog.

KSZ--external computer
A computer not operated by the Post Office but accessible through the VSZK using the gateway function which offers private videotex databases or other videotex services.

KHE--outlying call receiving unit
Through this it will be possible to access the VSZK cheaply and with good quality from every part of the country. Its task is to disconnect the videotex calls from the telephone network as quickly as possible. It will be possible to reach the KHEs with fictional telephone area codes. A nationally uniform charge by the minute will be established for videotex calls, near to the charge for local calls. The KHEs will be connected directly to the VSZK. Each KHE will serve a number of terminals simultaneously.

Figure 6. Elements of the Experimental Public Videotex System of the Hungarian Post Office



VSZK: videotex-szolgáltató központ
KSZ: külső számítógép
KHE: kihelyezett hívásfogadó egység
LT: lekérdezőterminál
SZT: szerkesztőterminál

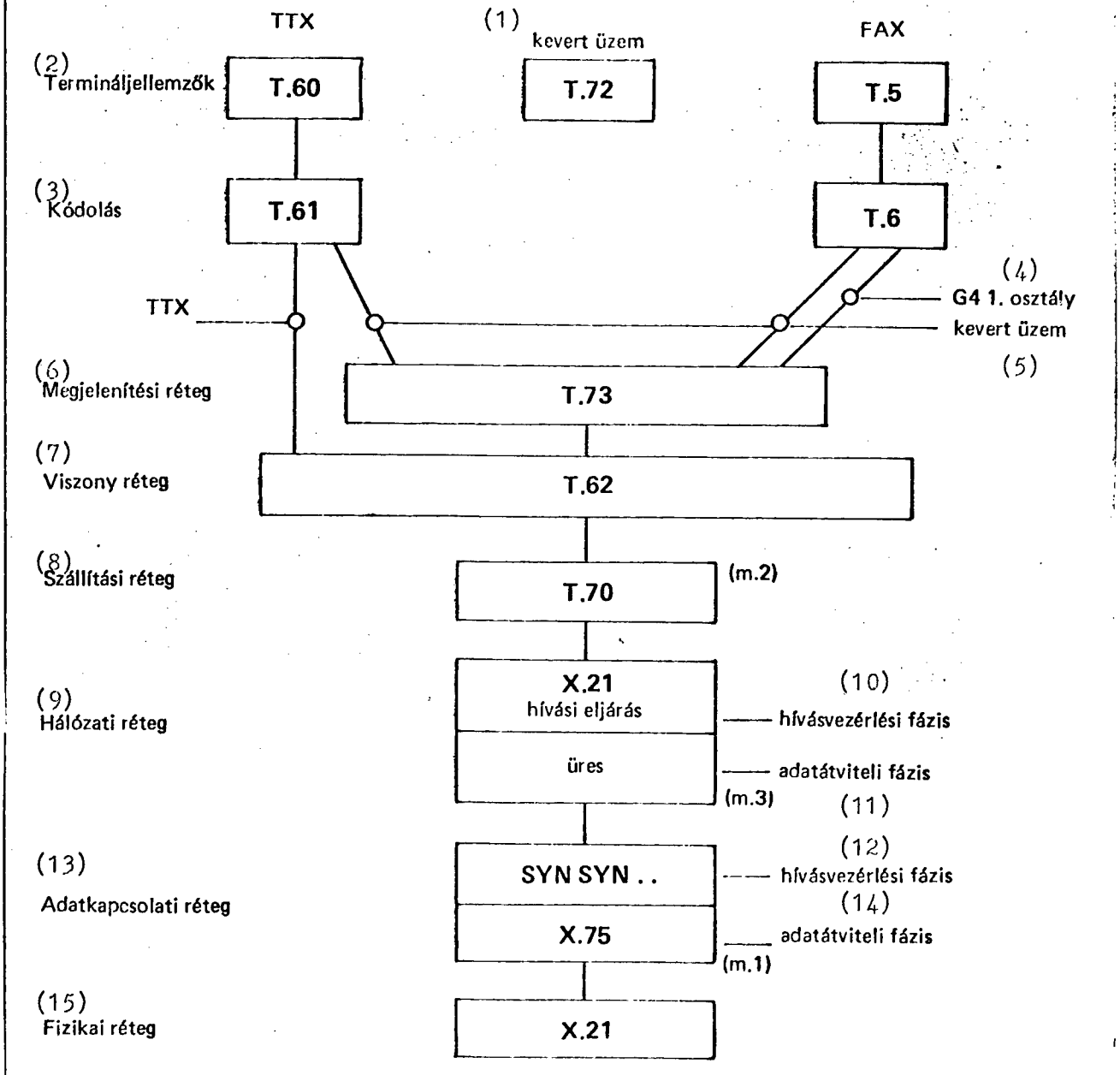
Key:

Tavbeszelo halozat=Telephone network
VSZK=Videotex service center
KSZ=External computer
KHE=Outlying call receiving unit
LT=Query terminal
SZT=Editing terminal

In the beginning the experimental videotex system will work with imported query and editing terminals. Following finalization of terminal characteristics the Post Office plans to publish a competition for development and manufacture of domestic videotex terminals.

At the time of writing this article is not possible to describe the characteristics of the experimental videotex system or a schedule for its creation and further development because, on the one hand, it might harm

Figure 5. The Hierarchy of Proposals Pertaining to Teletex and G4 Facsimile Terminals



Megjegyzések:

1. Az adatkapcsolati protokollt az X.75 ajánlás 1980. évi változata specifikálja.
2. Közös a különböző hálózatokon üzemelő terminálok számára.
3. Minimális hálózati rétegprotokoll használatos (lásd T.70. § 3.3.3.).

commercial interests and, on the other hand, some characteristics could change in the talks preceding the signing of a contract (the basic properties will not change). The significance of videotex justifies having the professional press provide room later for a detailed description of the experimental system.

Because of its simple use and rich display possibilities it can be expected that in our country also videotex will become a popular tool for the spread and collection of information and for other computer services--transactions on various external computers. The Post Office is in continuous contact with various information services and representatives of user groups so the experimental system will satisfy real needs. The experimental system will be delivered in 1987 and service to users may begin in 1988.

But however many ways videotex may be used it cannot become, because of its characteristics, the most general tool for text communication. Seeing the increase in the demand for text communication services and the domestic efforts in office automation the Hungarian Post Office will study the possibility of introducing a message handling service (this is not one of the telematic services). As a result of several years intensive work the CCITT has published in the Red Book a series of recommendation (series X.400) dealing with message handling services (MHS). Series X.400 itself is not complete and the F series proposals defining the service have not yet appeared, but the standardization work which has been done already justifies and makes possible the start of preparatory work. As a first step the MTA SZTAKI and the Budapest Technical University have been brought in to analyze existing message handling systems, evaluate the status of standardization and uncover possible methods of realization and the domestic market needs. This will help the Hungarian Post Office to decide when and how to acquire or develop what message handling system in the interest of introduction of an experimental service.

Key to Figure 5. The Hierarchy of Proposals Pertaining to Teletex and G4 Facsimile Terminals

1. Mixed operation
2. Terminal characteristics
3. Coding
4. G4 first class
5. Mixed operation
6. Display layer
7. Relationship layer
8. Transport layer
9. Network layer
10. Call control phase
11. Data transmission phase
12. Call control phase
13. Data switching layer
14. Data transmision phase
15. Physical layer
16. Notes:
    1. The 1980 version of proposal X.75 specifies the data switching protocol.
    2. Common for terminals operating in various networks.
    3. A minimal network layer protocal is used; see T.70 Section 3.3.3. [Note 3 refers to the "empty" (ures) block in the network layer.]

8984
CSO: 5500/3015

CARIBBEAN ASSOCIATION'S TELECOMMUNICATIONS ROLE REVIEWED

Port-of-Spain SUNDAY GUARDIAN in English 26 Apr 87 p 12

[Article by "a correspondent" preceding third annual conference of the Caribbean Association of National Telecommunications Organizations (CANTO), to be held in San Juan, Puerto Rico 3-9 May 1987]

[Text]

THE contribution that an adequate telecommunications network can make towards economic growth and development is still a moot issue in the discussion on development.

Unlike what is commonly thought, the notion of regional integration did not originate, with the British-sponsored Federation of 10 British West Indian islands (1958 - 1962).

Discussion the wisdom of integrating the islands had its genesis back in the middle of the 19th century.

The Trade Unions

Then the concern resided with the British colonial administrators. The result was that a number of constitutional models were drafted in Britain.

But the idea did not spring roots in the Caribbean until the 1920s. Significantly, the idea gained currency with the incipient trade union movement.

For people such as Marryshaw, Ciriani and Critchlow, integration of the region was a romantic notion based on the homogenous character of the great mass of West Indian people.

The trade unionists also perceived integration of the region into one political unit as a means of bringing the collective strength of labour to bear on decision-making at governmental and private sector levels.

Social advance, with education for the masses high on that agenda, was deemed to be another area of benefits that would come about as a result of integration.

Unfortunately, the reasons which underpinned the British-inspired Federation of the West Indies, had little to do with the primrdial bonds which unite the people of the region.

Neither had it anything to do with aspirations for social advance for the masses and eventual self-government for the region.

Administrative Convenience

What it had a lot to do with, was creating an environment to allow for greater colonial administrative convenience of the British government in its rule over the territories of the

Subsequent attempts at integration among Caribbean countries have been indigenously inspired, even if the models for integration came from abroad.

CARIFTA and CARICOM — the Caribbean Free Trade Association and the Caribbean Community and Common Market — have had their bases in the notion that if the economies are linked one to the other, structurally, then other desired aspects of integration, including the outside hope of a political union, will inevitably result.

Nothwithstanding greatly increased intra-regional trade during the mid and late 1970s, built almost exclusively on the oil-fueled economy of Trinidad and Tobago, the failures of CARIFTA and CARICOM to realise their goals have been clear and painful.

Regional experts, including the President of the Caribbean Devel-

opment Bank, William Demas, have identified the lack of "political will" among Caricom Governments to take the hard decisions as one of the major failings of the regional integration movement.

Important Aspect

A yawning psychological distance between the peoples of the islands, Guyana and Belize on the main land of South and Central America, made even more remote because of inadequate communications infrastructure, was another of the critical reasons for the continuing failures of several integration measures.

And this was articulated by a special task force set up to analyse the failures of the movement.

In attempting to address the other part of the mandate, which directed the experts to suggest ways forward for deepening the movement, the task force headed by Demas, suggested "the increased flow of information throughout the region on goals and benefits of integration, is a very important aspect of people integration."

To meet these goals, it is accepted that the mass media of communication — radio, television, newspapers and magazines etc., will have to be used.

It is however sometimes not fully appreciated the role played by telecommunications in transmitting the raw materials and finished products of the mass media output.

Further, the telecommunications industry allows for administrative arrangements to be made amongst the mass media organisations.

It is via telephone and telex links that the Caribbean Broadcasting Union (CBU), the Caribbean News Agency (CANA), send their messages to the national media of the various countries.

Private stringers attached to international media with world-wide circulation, also utilise the telephone and telex links to keep the outside world informed on the news and current affairs matters of the region.

Primary Production

Computer and data bank service are forcing their way into the Archipelago as Government and private sector industries attempt to move away from mere primary production and into certain goods and services which can displace some of the imported products and find their way into international markets.

A co-ordinated telecommunications network is indispensable if the region is to capitalise on the technology of the computer.

After a recent informal meeting in Port-of-Spain of a number of heads of government of CARICOM, and in some instances, high level ministerial representatives of their governments, the Prime Minister of Trinidad and Tobago, A.N.R. Robinson, was quoted as having suggested to his colleagues that the leaders should use the "telephone more frequently to keep in touch with each other" as a means of fostering greater links among CARICOM members.

The social contact afforded by telecommunication links adds up not directly in economic and political currency; but contributes to closing that psychological distance between Caribbean peoples.

It is a distance that has militated against successive attempts at integration for economic and political motives.

Senior Executives

No doubt the social contact through the telephone does indeed have indirect economic and political value as friends accustomed to discoursing with each other, are better able to enter into aggreements of economic co-operation than are strangers.

How can an organisation of national telephone companies of the Caribbean — which is another way of saying exactly what CANTO is all about — contribute to closer and more diversified links at more efficient rates is the next obvious question.

The rationale behind the formation of CANTO is useful for direction on the above. The stimulation was done by a growing consciousness of a few senior executives of national telephone companies.

At a 1983 AT&T 809 Conference, it became crystal clear to these executives that the international telecommunications industry, extended into the region, was not designed to serve the best interest of the Caribbean.

For one thing, the senior representatives of the telephone companies realised that the issues discussed at such fora, were not necessarily those issues which were of primary importance to the industry in the national borders of the states of the region.

Moreover, the reality of small size and the resulting inability of the individual states of the region to influence the setting of the agenda of the international conferences so as to reflect Caribbean concerns, impressed itself on those telephone executives.

A direct result of the structure of the international telecommunications industry are the links and associations which still run vertically, linking the Caribbean to the North-Western world.

Those forward looking telephone executives came to the realisation that there was little or no interaction amongst themselves and little horizontal linkages amongst the telephone companies of the region.

These were the realisations which forged the Caribbean national Telecommunications Organisation and determined the objectives of CANTO:-

"To establish a forum through which Caribbean Telephone Organisations may facilitate, on an on-going basis, the exchange of information and expertise pertaining to telecommunications, to help generate inputs for orderly growth and policy formation and to consider matters of mutual interest."

Fleshed out into actual goals, CANTO is about securing finance for the purchase of relevant technology, especially for the smaller telephone companies of the region.

CANTO also has the goal of seeking out finance for development projects of a regional nature.

The organisation has set itself the important task of impressing the governments of the region of the need for expansion and development of telecommunications facilities as part of their national development strategies.

Significant Advances

The negotiation of purchases on a regional basis to exercise whatever leverage possible on international suppliers, is another of the goals of the organisation.

Some member organisations of CANTO, notably the Trinidad and Tobago Telephone Company Limited (TELCO), have made some small, but significant advances in making certain adpatations to purchased technology.

Regional collaboration under the ageis of CANTO can further the embryonic research and development culture and lead to shared usagaes of more relevant technology.

The encroachment into Caribbean airspace of US Domestic Satellite is a subject which engaged CANTO discussions as far back as 1984.

It is a matter which will need great study from the engineering perspective and engage the wider audience, concerned as the Caribbean must be, with the prospects of further threats to the cultural soverignty of the Caribbean.

And while CANTO wrestles with crystalisation and implmentation of the immediate, it had also begun to throw out perspectives on the long term possibility of the Caribbean making use of its birthright to a position in space through the floating of a satellite.

The ultimate aim then of CANTO is to create a Caribbean environment where people and institutions can be more intimate with each other, where information for education and for life, is disseminated through the blood vessels and sinews of a relevant telecommunications environment; where the Caribbean can begin to feed and receive inforamation from the rest of the world on terms more conducive to our goals.

This is especially critical for a Caribbean seeking to make its way in a world often hostile to the aspirations of new states. Of course, it is self-serving for CANTO to state that in emerging telecommunications environment, integration schemes must have a better chance of success. It is nevertheless true.

CANTO is well positioned to succeed, if the necessary energies are expended. Whereas the economic and political aspects of regional integration have met with little success, the fucntional aspects of cooperation have had their successes.

Meteorological services, health research, planning and various aspect of educational programming have had significant advances. Telecommunications expansion and development through CANTO can survive and make the necessary communication contribution to integration.

/9317
CSO: 5540/096

C & W WIRELESS PLANS, SPENDING FOR CARIBBEAN CITED

Bridgetown BARBADOS ADVOCATE in English 24 Mar 87 p 1

[Text]

Cable and Wireless is expected to spend some $100 million in its changeover to digital technology by the 1990s, and this technology will put the Caribbean on par with the most sophisticated telecommunications networks in the world.

This was stated yesterday by Minister of Transport, Works and Telecommunications, Mr. Philip Greaves at the inaugural meeting of Cable and Wireless Caribbean marketing managers.

In his address the minister lauded the contribution of Cable and Wireless in the development of island economies through the provision of telecommunications services.

Noting that a modern telecommunications facility was a critical component of the infrastructural development of Caribbean economies, he said modern telecommunication services allowed tourists and businessmen visiting the Caribbean to communicate instantly with their families and offices.

According to the minister, however, the Caribbean was forced to compete with industrialised countries in an attempt to attract new markets to its shores, and in some cases telecommunications costs were higher.

Mr. Greaves therefore urged participants to develop appropriate strategies to counter this imbalance thereby making it more attractive for businessmen to conduct their business in the Caribbean.

During the three-day meeting, participants are expected to examine a range of topics including pricing marketing and sales promotion; public relations and the media; advertising in the Caribbean; value added network services; and enhanced service features of the DMS series.

/9317
CSO: 5540/096

LOCAL DATA-PROCESSING FIRM ATTRACTING WORLDWIDE INTEREST

Hamilton THE ROYAL GAZETTE in English 13 Apr 87 p 26

[Text]

A Bermudian data processing company hopes to launch a system it has developed for shipping agencies on the international market.

Abacus Associates Ltd., which provides data processing and accounting services to such local firms as John S. Darrell Ltd. and Container Ships Management Ltd., has already won contracts from two small American shipping agencies.

And last month Abacus took its Ship Agents System to Multiport, an international convention of shipping agencies held at the Waldorf Astoria Hotel in New York.

"Members came from all over the world to attend Multiport's annual general meeting held at and it was a convenient time for us to launch the system worldwide," said Mr. Sandy Russell, Abacus vice-president. "Our systems are particularly attractive to the smaller ship's agents who don't have huge resources to invest in data processing.

"In fact all of the systems designed and implemented by Abacus are written in Dataflex, a very powerful fourth generation development language, and installed on personal computers."

Abacus president Mr. Geoffrey Frith said the agents who attented Multiport were impressed that a Bermuda company was already supporting computer systems in the US.

"Particular interest was shown by agents from several countries including Turkey, Chile, Portugal, Colombia, Greece, Equador and even Jordan," he said.

Abacus is also developing a computer system for Bermuda's hotels which will handle reservations, advance deposits, guest billing and other services.

"The package will run on any IBM compatible hard disk system, from an IBM XT through to a network of PC's," said Mr. Frith. "Versions which run under UNIX and VAX VMS operating systems are scheduled for the release in the future."

Abacus also hopes to corner the market in data processing for Bermuda's smaller companies.

"We take the hassle out of computing," said Mr. Russell. "There are many companies in Bermuda which are not making full use of their computers because they don't understand how to concentrate the power of the PC within a specific application.

"People realise the potential but don't have the technical expertise to bring about an efficient solution."

Abacus director and systems consultant Mr. William Pantry said the company hopes to help Bermudian firms adapt to computer technology.

"There are some companies that have refrained from purchasing computers because they are wary of computerisation," he said. "We are in a position to ease that fear and advise clients how best to utilise the new technology."

/13104
CSO: 5540/093

BRIEFS

DAMAGED CABLE--Phone circuits to the United States that were disrupted yesterday when an overseas cable was crushed have been restored via satellite. Mr. Cornell Fox, marketing manager for Cable and Wireless Ltd., said the satellite link will be maintained while the Manahawkin submarine cable to the United States is repaired--a process expected to take one or two days. Mr. Fox said it is not known what damaged the cable but that fishing activity was the suspected cause. "The cable appears to have been crushed sufficiently to interupt services," said Mr. Fox. Half the 144 circuits connecting Bermuda with the US were restored via that satellite link by early yesterday afternoon and the remainder of the circuits were in use by late afternoon. Mr. Fox said the cable was damaged in about 120 feet of water off the US East Coast. He said the AT&T cable ship Longlines had been sent to repair the underwater phone link and that it should arrive at the damaged section by this morning. [Text] [Hamilton THE ROYAL GAZETTE in English 14 Apr 87 p 2] /13104

CSO: 5549/093

CABLE & WIRELESS OK'D TO OVERSEE ALL TELECOMMUNICATIONS

Kingston THE DAILY GLEANER in English 16 Apr 87 pp 1, 3

[Text] An agreement to establish a new joint venture holding company "to oversee Jamaica's national and international telecommunications for the more efficient operation of the island's telecommunications requirements" has been signed between the Government and Dable and Wireless Ltd.

To give effect to the agreement, the shares held by the Jamaican Government and Cable and Wireless in Jamintel Ltd, which is jointly owned by the both parties, will be exchanged for shares in the holding company.

An official announcement yesterday said the Jamaican Government will simultaneously exchange for shares in the holding company, all shares owned by them in the Jamaica Telephone Company Limited. The Jamaican government has also agreed to sell to Cable and Wireless sufficient of their shares obtained in the new holding company to enable Cable and Wireless Ltd to own 20 percent of the holding company.

"In due course, all existing shareholders in the Jamaica Telephone Company Limited will be offered the opportunity to exchange shares held by them for shares in the holding company on the same basis as the shares exchanged by the Jamaican Government," the announcement said.

In making this announcement, the Minister of Public Utilities, the Hon Pearnel Charles, welcomed the continued involvement of Cable and Wireless in Jamaica's telecommunications network.

Mr Tom Chellew, Cable and Wireless Executive Director responsible for the Caribbean Region, said, "The new holding company will co-ordinate the investment programmes for the continuing development of Jamaica's national and international telecommunications to maximise the benefits to the people of the island. This new venture reaffirms Cable and Wireless continuing commitment to Jamaica in particular, and to the Caribbean Region in general."

/9317
CSO: 5540/097

BRIEFS

CHITTAGONG RADIO STATION--The Government of Japan will provide a grant assistance to Bangladesh amounting to 373 million yen which is equivalent to approximately Taka 7.70 crore, reports BSS. The grant assistance would be utilised for the execution of a project for the replacement of the existing 10 kilowatt Medium Wave transmitter of Chittagong centre of Radio Bangladesh with a 100 KW new transmitter. An exchange of notes was signed between Bangladesh and Japan on Wednesday morning to this effect, where the Ambassador of Japan in Bangladesh, Mr Yoshitomo Tanaka and the Joint Secretary, External Resources Division, Mr Ayub Quadri, signed on behalf of their respective governments. Japan had earlier provided Bangladesh with a grant assistance of 1440 million yen in 1981 for the establishment of the National Broadcasting House of Radio Bangladesh at Agargaon, Dhaka. Official sources said that Japanese grant assistance to Bangladesh since independence in 1971 rose to 116,333 billion yen, (about Taka 2,368.5 crore) while it had made available 295,056 billion yen (Taka approximately 6,007 crore) to Bangladesh as commodity and project loans since 1973. [Text] [Dhaka THE BANGLADESH OBSERVER in English 2 Apr 87 p 8] /9317

DHAKA-DELHI DIRECT DIAL--Dhaka-Delhi direct dialling system came into operation from Thursday, President Ershad and Indian Prime Minister Rajiv talking to each other over telephone from their capitals, reports BSS. Exchanging pleasantries with Prime Minister Rajiv Gandhi from his Bangabhaban Office, President Ershad said the introduction of direct dialling system between the two countries is in line with the decision to strengthen telecommunication link among the SAARC member countries. He said it will further consolidate and foster the SAARC spirit and help strengthen the friendly relations between Bangladesh and India. He thanked the Indian Prime Minister for his felicitations on the auspicious occasion on the celebration of the Independence Day of Bangladesh. The President wished personal well-being of Prime Minister Rajiv Gandhi and through him that of the people of India. Prime Minister Mizanur Rahman Chowdhury who is in charge of the Ministry of Post and Telecommunication, the Indian High Commissioner to Bangladesh Mr I.S. Chadda and senior officials of the Telecommunciations Department were present. [Text] [Dhaka THE BANGLADESH OBSERVER in English 28 Mar 87 p 1] /9317

CSO: 5550/0123

SCIENTISTS MAKE BREAKTHROUGH IN SUPERCONDUCTORS

BK1001318 Hong Kong AFP in English 1309 GMT 10 May 87

[Text] New Delhi, may 10 (AFP) -- Indian scientists have developed superconductors with zero electrical resistance that could revolutionise domestic electronics and computer industries, the *Press Trust of India* (PTI) reported Sunday.

Scientists at the Indian Institute of Technology have developed about 50 new alloys based on rare earth elements abundantly found in India which show zero resistance to electricity, PTI said.

India thus joins an exclusive club of countries such as the United States, Japan and China, which have developed superconductors, the news agency said.

The discovery can lead to incredible savings in energy and be the precursor of trains that run hundreds of kilometres (miles) per hour on a cushion of magnetism, electric cars, miniature computers and reactors operating on the principle of nuclear fusion rather than fission, it said.

Cables to reduce electricity losses in transmission and huge magnets for industrial application are other possibilities thrown up by the breakthrough in superconductivity research.

Superconductivity involves a transition that occurs in many metals when they are cooled to temperatures within several degrees of absolute zero - - equivalent to minus 273 degrees Celsius and representing total absence of heat.

As metay limit, they lose resistance to electricity and become superconductors. This enables them to carry electrical currents without the loss of any energy and, in some cases, to generate powerful magnetic fields.

Research in superconductivity has been growing, and U.S., Japanese and Chinese scientists have developed a new class of materials exhibiting superconductivity at 75 degrees Kelvin. Kelvin is a unit of the coldest temperature conceivable.

The alloys developed by Indian scientists show superconductivity at 95 degrees Kelvin (minus 178 degrees Centigrade), PTI said.

/9274
CSO: 5500/4717

MINISTER EXPLAINS SATELLITE DEVELOPMENT PLANS

New Delhi PATRIOT in English 17 Apr 87 p 5

[Text]

The second development flight of the augmented satellite launch vehicle (ASLV-D II) will take place as scheduled next year and there was no need to take help from outside India for this, Minister of State for Science and Technology K R Narayanan told the Rajya Sabha on Thursday, reports PTI.

There was no need for scientists to get "disheartened" by the failure of the first launch as failure rates were quite high even in developed countries, he said adding, even in the US, two days after our ASLV launch, their Centaur-Delta rocket failed.

Replying to clarifications from members on the statement made earlier on the ASLV D-I launch from Sriharikota last month, Mr Narayanan said, if there is any impression that we need high technology from outside India for our launches it is not true. The Indian space programme is a self-reliant one and it is our objective to develop indigenous rocket capability to launch even communications satellites.

Mr Narayanan said at the moment India does not have the capability to launch communication satellites on its own as they require high power. This is why the USA was launching the INSAT series and Indian remote sensing satellite was to be launched by USSR this year end.

Even in the ASLV launch, he said, almost all the new systems and technologies like strap on boosters and closed loop guidance systems worked well, the latter partially, because the second stage did not ignite.

For the brief period the satellite was up, data sent by it revealed that all the new systems had worked well, he said.

Even the vertical configuration of the ASLV for satellite integration with the rocket, telemetry and ground tracking had all worked well, he said.

He said the exact reason for the failure of ASLV-D-I had not been found yet. Millions of pieces of data had to be analysed and it will take some time for analysis, he said.

Earlier, opposition members wanted to know the reasons for the failure of the ASLV mission and if it would affect future mission.

Earlier in a statement, Mr Naryanan said, the performance of the ASLV vehicle was normal up to 48.5 seconds after lift off.

At 48.5 sec. there was a telemetry indication that the first stage ignition command was sent from the onboard computer. However, the ignition of the first stage motor did not occur. Consequently, the flight terminated prematurely at 163 sec. and the objective of the mission of placing the satellite in orbit could not be achieved, he said.

Based upon analysis carried out so far, he said the cause for non-ignition of the core motor had been narrowed down to possible malfunctioning of any of the following elements of the ignition system namely pyro-technique initiator, igniter booster charge which provides energy for sustained ignition of the stage motor, safe arm device, and associated circuitry.

All possible failure modes are being analysed and tested rigorously, he said.

/9317
CSO: 5550/0132

BHARAT ELECTRONICS TO SWITCH TO HIGH-TECH MANUFACTURE

Madras THE HINDU in English 20 Apr 87 p 6

[Text]

NEW DELHI, April 19.

Bharat Electronics Ltd.(BEL), a public sector enterprise, has decided to dispense with certain low technology areas of production and diversify into new high-tech products like switching and transmission systems, digital microwave radio relays and colour television (CTV) picture tubes during the next few years. It has already been given a licence for the production of CTV picture tubes.

According to Captain S. Prabhala, Chairman and Managing Director of BEL, the company is now awaiting Government approval for some of its diversification proposals. Among the other products it proposes to take up are language laboratory equipment (to be used for giving lessons in languages), VHF beacons, etc. Knowhow for digital microwave transmission systems --BEL and Indian Telephone Industries will jointly do it -- will come from a Japanese company.

Colour TV tubes: BEL has begun transferring knowhow to user industries in a big way, and has already signed three agreements to provide TV picture tube plants on a turnkey basis. One of these is expected to be completed by September. Some other private and public sector companies have approached BEL for knowhow and plants on a turnkey basis and negotiations are at an advanced stage.

Capt. Prabhala told a news conference here on Saturday that BEL's output of black and white TV picture tubes went up by 25 per cent in 1986-87 to a record 6.74 lakh pieces. A moment of pride for BEL, was the successful completion of the round the world cruise of the fibreglass sail boat Trishna equipped with BEL's 100 WHF communication set. The crew were satisfied with the reliable communication link that the set provided throughout the cruise.

OB vans: BEL also recently delivered, five months ahead of schedule, the first of a set of six colour outside broadcast vans manufactured by it for Doordarshan. The OB van is a modern state-of-the art colour TV studio on wheels, equipped with facilities like digital video effects, microwave link to the main TV transmitter, and VHF link with the roving TV camera. The remaining five OB vans will be delivered by June. BEL is also supplying equipment for two colour studios of Doordarshan in the Siri Fort area of Delhi.

BEL is involved in meeting the critical requirements of the country's oil industry. It has a turnkey contract for system engineering, supply, installation and commissioning of radars and VHF communication for offshore installations of the ONGC.

Defence projects: It is also involved in several critical defence projects where it has the prime responsibility for systems integration in addition to designing, developing and manufacturing critical radar and communication equipment. It has formed a separate space electronics division in Bangalore to cater to the requirements of the Indian Space Research Organisation and made several sub-systems for ISRO.

/9317
CSO: 5550/0133

INDIGENOUS TECHNOLOGY FOR RURAL AUTOMATIC EXCHANGES

New Delhi PATRIOT in English 11 Apr 87 p 9

[Text]

The Government has decided not to allow any foreign collaboration for the manufacture of the rural automatic exchange equipment and instead use the technology developed by the Centre for Development of Telematics (C-DOT) and the ITI.

It was officially stated on Friday that the entire production to be based on indigenous technology, developed up to the manufacturing stage, will result in a foreign exchange saving of more than Rs 66 crore.

The savings will be Rs 7.24 crore in the area of know-how and capital goods for six units and Rs 59 crore or so for assembly, subassembly and components among other things.

The decision not to import technology in this field has been taken as the rural exchange based on the C-DOT design has been evaluated and its 128-Port RAX has been tried out in the national network at Kittur in Karnataka.

The ITI's integrated local-cum-trunk exchange (ILT) has been installed at Hebbagodi in Bangalore and been in operation for nearly a year. Besides the ILT having been approved by the defence people, several of these exchanges are currently under installation. Hence the Government decision to avoid import.

The Department of Electronics had floated a global tender for purchase of technology for the digital rural automatic exchange in 1985 and nine companies had responded.

Out of the five companies that had been called to make a presentation only one was recommended by the evaluation committee under the chairmanship of Mr K P P Nambiar, the then chairman of ITI.

The committee had submitted its report in May 1986.

In its recommendation the committee had also opined that the C-DOT technology will have to be evaluated before a final decision is taken on import of a second technology, the first being the ITI one. All these considerations have led to the change in decision.

/9317
CSO: 5550/0130

FIRST INDIGENOUS PUSHBUTTON PHONES TO BE MARKETED

Calcutta THE TELEGRAPH In English 17 Apr 87 p 9

[Text]

Calcutta, April 16: Rajasthan Telephone Industries Limited (RTIL), a joint sector company making push button telephone sets, will start marketing its products from next month. RTIL is also the first of the 51 licences to start production of telephone sets in the country, according to Mr Ranjan Poddar, managing director of the company.

Addressing newsmen here on Tuesday in connection wth the RTIL's public issue to raise Rs 65 lakhs for the project, Mr Poddar said that orders have already been received from Mahanagar Telephone Nigam and other private and public sector companies for the supply of telephone sets.

Mr Poddar said that RTIL has selected the technology of Ericsson Information System of Sweden, under the government's centralised purchase of technnology scheme. Ericsson being one of the largest communication companise in the world, RTIl will have the advantage of direct transfer whenever any advance is made in its technology. Initially the telephone sets will be produced from completely knocked down (CKD) kits while RTIL will indigenise the production in four years. Besides telephone sets, RTIL will also produce hook switch assembly, microphone and receiver capsules.

The telephone sets will be initially priced at Rs 1,000 each and will be gradualy brought down as the project involves manufacturing of certain critical components at a later stage. For this an extra investments of Rs 2 crores will be necessary, Mr Poddar said.

According to Mr Poddar, the market for push-button telephone instruments was likely to be about Rs 120 crores per year and RTIL in the first year is expected to capture about six per cent with a turnover of Rs 7.2 crores. He hoped to make a gross profit of Rs 1.06 crores in the first year.

Rajasthan Industrial Investment Corporation (RIICO), a state government unndertaking and Mr Poddar together have already contributed Rs 68 lakhs or 26 and 25 per cent of that equity respectively in the Rs 3.38 crores project. Financial institution have advanced Rs 1.65 crores and commercial banks Rs 25 lakhs. The project being located at Bhiwadi industrial complex, backward area, it will be entitled to a subsidy of Rs 15 lakhs.

The public issue of 6,51,700 shares of Rs 10 each at per will be opened for public subscription on April 27, to raise the balance of the fund.

/9317
CSO: 5550/0131

INDIA, USSR SIGN TELECOMMUNICATIONS AGREEMENT

New Delhi PATRIOT in English 11 Apr 87 p 9

[Text]

India and the Soviet Union will coporate in a big way in the field of telecommunications as per an agreement signed between the two countries on Thursday.

The agreement was signed by Communications Minister Arjun Singh and Soviet Deputy Prime Minister V M Kamentsev, after discussing matters of mutual cooperation in the field of telecommunications.

The agreement provides for the introduction of a full scale international subscriber dialled telephone service between India and the USSR, rendering joint assistance in providing telecommunication traffic to some third countries and to promote the provision of telecommunication facilities to industrial projects constructed or operated on the basis of Indo-Soviet agreements on the territories of India and the USSR.

The agreement also provides for jointly examining, manufacturing and development of telecommunication equipment with the objective of using components made in either country, supply and sale to each other, joint manufacture of communication equipment, joint projects for research and training.

Both the countries will also take up joint manufacture of microwave relay equipment and mechanisation of cable laying equipment.

In the field of posts, it was agreed to direct and transit postal exchange by sea, air and surface routes and to take measures for promoting cooperation in the field of philately.

/9317
CSO: 5550/0130

DEMAND FOR HANDING SECOND TV CHANNEL TO STATES REJECTED

Bombay THE TIMES OF INDIA in English 23 Apr 87 p 6

[Text]

NEW DELHI, April 22.

THE minister of state for information and broadcasting, Mr. Ajit Panja, today rejected the demand for handing over the second channel of Doordarshan to states.

However, he assured the Lok Sabha that adequate representation would be given to regional cultures on that channel.

He was replying to a debate on the demands for grants for his ministry. The house later passed the demands. Even while CPM members from West Bengal were making the demand for handing over the second channel to states, the Congress members, including Ms Mamta Banerji, were heard saying "No, no".

Mr Panja's two-hour-long reply included a plethora of statistics. It was a far cry from his predecessor, Mr V. N. Gadgil's performance last year which had a spark of idealism. Mr Panja also managed to sidetrack his reply when he provoked the opposition members while dealing with the demand for televising the proceedings of Parliament.

He wondered what impression it would create about the Parliament members if people saw them staging a walk-out in protest against the speaker's ruling. This obviously was a reference to the ruling given by Mr Balram Jakhar yesterday with regard to the privilege motion against Mr Brahm Dutt, minister of state for finance. The opposition members strongly protested against Mr Panja's remarks.

The deputy speaker, Mr M. Tambi Durai, who was in the chair, himself disapproved of the remark saying, "You are more or less casting aspersion on members".

Members belong to Telugu Desam, CPM and Forward Block, though in very small numbers, vehemently protested and told Mr Panja "you cannot cast aspersions".

Mr Panja justified advertising on TV and said the revenue from this was being used for the development of Doordarshan's network. For instance, 500 TV sets for community viewing in north-eastern states were provided from this revenue.

However, he did not directly reply to criticism that advertisements were spreading consumerism and giving an unreal view of life. Mr Panja pointed out that the entire code of conduct for commercial advertisements had been revised on March 30, 1987.

The code had been made up-to-date taking into account concerned laws passed by Parliament and state legislatures. All concerned had been asked to strictly implement the code, he said.

On the selection of serials which had been severely criticised. Mr. Panja said a new committee had been set up to which an appeal against the decision of the screening committee could be made.

He said that telecasting of late night films would be extended from next month to Mussoorie, Pune, Jalandhar, Amritsar, Kodaikanal, Srinagar, Asansol, Behrampore and Goa. He denied there was any discrimination against any region in telecasting of programmes.

With regard to provision of pension for journalists, the minister said the government would be guided by the press commission's recommendations.

Mr Panja said that by the end of the seventh plan, All India Radio would cover 79 per cent of the country through 80 broadcasting centres and Doordarshan 70 per cent area through 191 transmission centres.

/9317
CSO: 5550/0134

BRIEFS

CAUSE OF SATELLITE CRASH--The government has denied a report that the use of untested strap-on technology led to the crash of the satellite launch vehicle, ASLV [Augmented Satellite Launch Vehicle], on the 24th of March. A spokesman of the Ministry of Science and Technology described an earlier PTI report on the cause of the crash as premature. He said expert teams are still carrying out detailed analysis of the data collected during the flight and the result of the analysis is expected soon. [Text] [Delhi Domestic Service in English 0240 GMT 8 May 87 BK] /9274

ROCKET LAUNCHED FROM SRIHARIKOTA--A RH-560 rocket was successfully launched from Sriharikota yesterday. An official release said in Madras that several experiments were conducted during the 9 minute flight of the rocket which attained an altitude of 300 km. It carried a radio sensor to measure the altitude. [Text] [Delhi Domestic Service in English 0240 GMT 5 May 87 BK] /9274

CSO: 5500/4716

BRIEFS

NEW IDF TRANSMITTER--Tel Aviv IDF Radio in Hebrew at 0500 GMT on 29 April 1987 announces the inauguration today of a medium wave transmitter, the IDF's strongest to date, in the north. This is considered the second stage of the plan to spread IDF transmitters throughout Israel. In the first stage three transmitters were dedicated last year. This transmitter is the first of its kind in the north. There will be special broadcasts for northern Israeli residents during Independence Day which should be received clearly thanks to this transmitter. The new antenna will be 50 kw, on 1368 khz. [Editorial Report] /9604

CSO: 5500/4514

BRIEFS

DIRECT DIALING LINK--Pakistan Telegraph and Telephone Department has started international direct dialing service with Canada, Finland and Tunisia, thereby establishing direct dialing links with 47 countries. [Text] [Karachi Domestic Service in Urdu 0600 GMT 29 Apr 87] /9604

CSO: 5500/4715

BRIEFS

RIYADH SATELLITE GROUND STATION--King 'Abd-al-'Aziz Scientific Community, the largest scientific research center in Saudi Arabia, is currently overseeing construction of a satellite earth station, one of a several located in various parts of the globe, designed to pick up signals from satellites. The firm "EOSAT" says that the Riyadh station is the latest in state of the art receiving systems. The Saudi station can receive signals from most satellites aloft, being equipped with receivers that can pick up most of the various systems in place including the French system. The Saudi remote sensing earth station will track, and receive data recorded by systems such as "LANDSAT" satellite which is mapping earth's principle contours and geographical features as well as the Multi-Spectrum Scanner (MSS), AVHRR, MLA-operated SPOT and PLA that sensitive to all visible colors of the spectrum. The Saudi station can record remote sensed images and data for archiving on magnetic tape and can also pick up image sensing signals from outer space, planned for the future, that will be using compatible frequencies. [Excerpt] [London AL-MAJALLAH in Arabic 11-17 Mar 87 p 30] 13291/12859

CSO: 5500/4512

BAHAI RADIO STATION LAUNCHED INTO OPERATION

Monrovia NEW LIBERIAN in English 24 Mar 87 p 3

[Text] The newly constructed $500,000 Bahai radio station in Paynesville City has been dedicated by Assistant Post and Telecommunications Minister Julius H. Hoff.

Radio Bahai Liberia, constructed with funds provided by Bahai throughout the world, would operate on 990khz on the AM or MW bands.

The radio which has a power output of five kilowatts or the equivalent of 5,000 watts and beams from a directional antenna, would be received throughout the Liberian Coast and as far inland as Foya in Lofa County and Bahn in Nimba County.

Performing the dedicatory ceremony on Saturday, Assistant Minister Hoff said the construction of the station was a "significant achievement, especially at this turning point in our existence as a nation," adding, the "objectives of the radio station fit into the country's critical needs at this point."

Speaking further, Minister Hoff hoped the station would help in "the promotion of unity, the effective communication of development information to our rural population, the promotion of a stronger indentification with our cultural roots through our music and folklore, and a general spiritual regeneration in our society."

In remarks Deputy Information Minister G. Moses K. Washington, who observed that Radio Bahai is the second religious radio station to be inaugurated since the ascendency of Dr Samuel K. Doe to power, also hoped the radio station will help to enlighten the Liberian people about the Bahai Faith.

Minister Washington observed that "communication is a very powerful force which can be used for good or bad," and therefore urged authorities at the station to operate the station in strict adherence to its purpose and objectives.

Later the Station Manager, Mr Bill Frank Enoanyi, thanked all those who contributed towards the construction of the Bahai's Radio station in Liberia.

Radio Baha'i is the first Baha'i radio station to be built in Africa.--LINA

/9317
CSO: 5500/48

BRIEFS

PLATEAU STATE FM RADIO--The Plateau State Government has signed a contract for the building of a 3.5 million naira frequency modulation, FM, for its radio station. The state commissioner for information and social development, Mr James Dimka, said at a ceremony in Jos yesterday that the people have the right to know what the government was doing for their well-being. This, he said, has become more pertinent now that emphasis has shifted to the development of rural communities. Work on the project is expected to be completed in September. [Text] [Lagos Domestic Service in English 1500 GMT 10 May 87 AB] /6662

CSO: 5500/49

BRIEFS

ECOWAS LOAN FOR TELECOMMUNICATIONS PROJECT--Komlan Alipui, Togolese minister of economy and finance, and Mahanta Ibrahima Fall, director general of the ECOWAS Fund, this afternoon in Lome signed an agreement for a grant of approximately 205,465,500 CFA francs. The two personalities represented respectively the Togolese Republic and the ECOWAS Fund for Cooperation and [words indistinct] Development. This loan, which will go to the Posts and Telecommunications Department, will be used in purchasing and installing a multiplex transmitter at the (Kakavelli) telecommunications station in order to automatically link telegraphic, telephone, and telex services, which normally pass through Europe, with Togo and its neighbors, namely Benin, Ivory Coast, Ghana, and Nigeria, in accordance with resolutions adopted at the ECOWAS heads of state and government conference in May 1979 in Dakar on the priority telecommunications program for the West African subregion. Part of this loan will be used in trading [word indistinct] experts. The work on this project will last 16 months. [Excerpt] [Lome Domestic Service in French 1900 GMT 28 Apr 87] /9604

CSO: 5500/47

UKRAINIAN TV CHIEF ON USSR-U.S. 'TELEBRIDGES'

AU281310 Bratislava TELEVIZIA in Slovak Issue No 17 20-26 Apr 87 pp 16, 17

[Interview with Ivan Gavrilovic Mashchenko, chief director for programs of the Ukrainian Television Service, by Karol Hederling in Bratislava, date not given]

[Excerpt] [Hederling] Ivan Gabrilovich, a new form of television program has appeared on Soviet TV in the past 2-3 years, the telebridges, and they have quickly become very popular with television viewers. In these telebridges you link the people of various continents, regions, and places. There was also a telebridge between Kiev and Bratislava. What has brought about this qualitatively new form of public journalism?

[Mashchenko] It was prompted by the urgent need for direct contacts between people of different nations and different social systems and the need to get to know each other.

[Hederling] There have been more than 10 telebridges in the Soviet Union already and...

[Mashchenko]... and now another, very interesting one is being prepared. A meeting between deputies to the Supreme Soviet of the USSR and U.S. congressmen.

[Hederling] Will the U.S. administration approve?

[Mashchenko] I think so. Because what is the situation that has developed after all? American ideologists and propagandists have always maintained that our society is a closed one, that it does not want contacts with them, does not wish to exchange information with them. Even though they would not openly admit that they are not interested in such contacts, some owners of television companies and representatives of the administration and high officials began to resort to subterfuge.

/12624
CSO: 5500/1040

MOSCOW TV CARRIES MOSCOW-SOFIA TELEBRIDGE

LD282340 [Editorial Report] Moscow Television Service in Russian at 1744 GMT on 28 April carries a 60-minute Moscow-Sofia Telebridge, conducted by Aleksandr Tikhomirom from the Kosmos Hotel in Moscow and Stefan Enchev from the People's Palace of Culture in Sofia. Sergey Slivchenko and Aleksandr Ardzhiev respectively put questions to groups of people gathered on the street in the two capitals. The topics treated include the progress of work under way on the Sofia metro system, the supply of Bulgarian goods in the USSR, cooperation in the Ivanovo-3mm joint scientific production association, the experience of the Bulgarian state reception service and preparations for a joint space flight in May 1988, with contributions to the program from Bulgarian and Soviet Cosmonauts.

/12624
CSO: 5500/1040

BRIEFS

SOVIET TV IN CSSR--A third of Czechoslovakia's population will be able to receive Soviet TV First Program by the end of the present FYP. Taking into account the Czechoslovak viewers' constantly growing interest in Soviet TV programs, the construction of transmission stations is being successfully carried out in the country. This year already, those who receive Soviet TV programs in Prague, Brno, Karlovy Vary, Banska Bystrica will be joined by viewers in Bratislava, Ceske Budejovice, Ostrava, and Plzen. [Moscow Domestic Service in Russian 1030 GMT 20 Apr 87 LD] 12624

CSO: 5500/1040

NETHERLANDS TRANSPORT COMMUNICATIONS PROJECT JOINS EUREKA

Amsterdam COMPUTERWORLD in Dutch 13 Jan 87 p 17

[Article by Cok De Zwart: "Netherlands Initiative in Freight Transportation--ERTIS Now EUREKA Project"]

[Text] Rijswijk--Last month the fourth EUREKA ministers conference was held in Stockholm. EUREKA is a technological research framework for 19 European countries. During the conference it was decided that 39 proposed projects, among which the purely Netherlands ERTIS project, were eligible for a EUREKA subsidy. Netherlands companies are involved in 14 of these projects. Most projects are being initiated by international companies such as Philips.

There are, however, a few projects in which EUREKA cooperation is sought by independent companies or institutions operating solely on a national basis. A good example of one such initiative is ERTIS, European Road Transport Information Services. ERTIS is a system to exchange information allowing European road transportation companies to coordinate runs, shipments, and other important information as well as possible.

The NOB (National Organization for Professional Road Transportation) serves as the pioneer. This is understandable since the Netherlanders are still "Europe's transporters." There are about 7,000 freight companies in the Netherlands with a fleet of almost 50,000 trucks. Between 12,000 and 15,000 of these trucks (with a total carrying capacity of 250,000 tons) serve international destinations.

"This year ERTIS will be given its own legal status--what kind we do not know as yet. It is an initiative of interest groups in three European countries: Belgium, the United Kingdom, and the Netherlands," says Dr Cand H.J.J. de Breet, NOB controller and Netherlands co-project coordinator. These countries already have a national road transportation information system based on videotex. Contact has already been made with the Scandinavian countries, Denmark, the FRG, France, Italy, Spain, Finland, Switzerland, and Austria.

ERTIS is based on the Netherlands transportation information system "Tradicom" (Transportation Serviees Communication), which the NOB has provided for professional transporters via Viditel since 1982, regardless of whether or not they belong to NOB. De Breet explains: "At the moment 1,100 companies are members. They are the companies that handle 80 percent of the international

runs and 60 to 70 percent of freight transportation in the Netherlands. Via Viditel we offer this restricted user group a means of communicating efficiently with each other to optimize the use of the fleet's carrying capacity. Transporters who have more cargo than they can transport in a peak period, can advertise the problem. Another company which has unused capacity can then respond. These cargo ads--averaging about 7,000 a month--allow an efficient match of supply to demand. In addition, Tradicom offers other services: up-to-date information on road blocks or closed borders, maximum allowable dimensions or weights, ferry timetables, etc. Tradicom also has a database containing information on the transportation of dangerous substances."

This year the EUREKA subsidy will be used to study the feasibility of internationalizing the Tradicom system, the transportation ads as well as the supplementary information. However, it is not only the European ideal that is inspiring the Netherlands transporters to start this project. In the background the liberalization of road transportation, which is to be put into effect by 1992, also plays an important role. According to De Breet, there is a danger that Tradicom might become obsolete--in other words less valuable--if the international information network fails to get off the ground.

The network's infrastructure will be based on the national PTTs' public videotex networks. Says De Breet: "We deliberately opted at the start for a closed circuit on the Viditel network for Tradicom instead of having a network of our own. It is very straightforward for the user and furthermore much cheaper, partly because the PTT is responsible for the network's construction, maintenance, and capacity. We hope that the national PTT's will succeed in connecting their videotex networks in the next 2 years. The upcoming ERTIS feasibility study is certainly meant to push the PTT's in that direction."

25023/12859
CSO: 5500/A018

NEW REGULATIONS FOR BROADCASTING, SATELLITE CHANNEL ALLOCATION

Frankfurt/Main FRANKFURTER ALLGEMEINE ZEITUNG in German Mar 87 pp 1,2

[Text] Bonn, 13 March. In the future, the public broadcasting facilities and the private suppliers of programs in the Federal Republic will be able to deal with their tasks by a uniform regulation that is binding for all the Federal Laender. After many years of negotiations, the heads of governments of the Laender have fixed the "New Ordinance for Broadcasting" in a government contract. This happened late Thursday evening, and the contract is supposed to be signed in Bonn on 3 April, 2 days before the Land election in Hessen. This was the 16th Conference on this topic. None of the participants in the negotiations had any doubt that the present government contract would be signed. Until the time of signing of the contract, there would be no changes or emendations.

The present agreement establishes prerequisites for technical utilization of satellite broadcasting (both television and audio). It controls the financing of television and radio transmissions provided by private program suppliers, as well as the distribution of broadcasting fees. It regulates the advertising possibilities of broadcasting and it contains regulations concerning verification organs for private broadcasting. These were the contested points in the negotiations. "Things are coming to a head," said the Chairman of the Broadcasting Commission of the Land, the Ministerial President Vogel (CDU) from Palatine Rhineland. The Chairman of the Ministerial Presidential Conference, the Mayor of Hamburg von Dohnanyi (SPD) stated that now the stability and development of public broadcasting was secured, but also that "a real opportunity was opened up for private entrepreneurs in an orderly and legally safe procedure." The parliaments of the lands must still confirm the contract.

The directly receivable broadcast satellite TV-Sat presumably will be placed in orbit in the fall. The public and private broadcasters can use its capacity jointly. The first two channels were assigned to private program suppliers on the basis of the partial government contracts of the previous year ("South" and "North track"). These will presumably be the conglomerate Sat 1 as well as RTL-Plus. A private program supplier likewise is supposed to be able to use the third channel, and the fourth one is to be used by ARD (Working Group of FRG Broadcasting Institutes). It was here set down as a fixed condition that the ARD broadcasts audio programs in digital technology from 1:00 o'clock to 18:00 o'clock; then the channel can be used for television programs. Out of the 15 audio channels, each Land will receive one, and North Rhine-Westphalia, Baden-Wuerttemberg, Bavaria, and Lower Saxony each will receive an additional

"dispositional channel", and Broadcasting Germany as well as Berlin will each receive a channel in mono quality. The ZDF (Second Germany Television) receives the fifth channel of the TV-Sat. ARD and ZDF could use the channels for their satellite programs ARD-1-plus or 3-Sat, which previously were broadcast via telecommunication satellites. It has not yet been decided which private program supplier will use the third channel on the TV-Sat. This channel is reserved for the lands under SPD leadership, namely Northrhine Westphalia, Hessen, the Saarland, and the city state of Bremen ("western track"). As long as a private program supplier is not admitted to it, the ZDF can use this channel. This provision has been made because the TV-Sat in its initial stage will only have four channels available. Only when the reserve satellite TV-Sat 2 is placed in orbit will more than four channels be available. This is not expected before 1990. This point of the regulation indicates that the heads of government intend to create a permanent contractual opus.

In a revision clause, the ministerial presidents state that the propagation of digital audio broadcasting supposedly is also possible by using the French broadcasting satellite TDF 1. The TV-Sat and the TDF 1 were developed in 1980 in the context of a German-French agreement. In this clause, the minister presidents affirm the equal-rank importance of audio broadcasting as compared to television.

Advertising in broadcasting is regulated in two ways. What applies to television is that the total time, the daily limitation to times before 2000, the restriction to working days, and the distribution regions will be retained. However, in the future advertising will also be permitted Sundays to a certain extent. The Hessian Broadcasting initially will be able to continue advertising in its third television program. But this will stop as soon as the next agreement is reached concerning adaptation of the broadcasting fees, and the broadcaster will then have revenues from advertising for the fourth audio program. The time span for this: at the latest by the end of 1990. As the last public transmitter, West German Broadcasting (WDR) will in the future also be able to advertise in its audio programs. But the government contract provides a limitation in this connection: 90 minutes per work day on a yearly average. Thanks to the efforts of Minister President Rau from North Rhine-Westphalia, advertising will not be strictly specified to minutes per day. The arrangements of WDR are facilitated thereby, but verification is made more difficult.

For the private broadcasting institutes it is important that public facilities are not allowed sponsor advertising (that is transmissions paid for by a financier) but that such advertising is allowed to the institutes. During sports broadcasts they may also advertise during pauses, which is not permitted to the public facilities. The heads of government indicate in this clause that private broadcasting requires more advertising opportunities than the conventional institutions. At the same time they try to keep the advertising of the private facilities within limits.

In the future, broadcasting fees will to a small extent be used to finance the central offices for the approval and control of private broadcasting in the Laender. This is supposed to amount to 2 percent. Thus the costs of these central offices and their supervisory function is paid for, the so-called open channels are funded, and the technical preconditions in the Land central offices are secured for 4 years.

The SPD has misgivings about this. In its opinion, this gives an advantage to private broadcasting. The Laender that are directed by the union say that the Land centrals are supposed to have the task of creating the technical and organizational preconditions for broadcasts from non-public broadcasting facilities. The government contract expressly states that broadcasting fees may not be used to finance private promoters. It is also set down that cancellation of the government contract pertaining to fees by the Laender that are directed by the union is invalid. Rhineland-Palatinate will sue against withdrawing advertising in the third Hessian television program, according to Vogel.

The state secretary from Rhineland-Palatinate, Mr. Schleyer, disclosed that in the very near future he will meet with the leader of the Hessian state chancellory, Mr. Giani, to talk about the Hohe Wurzel transmitter. The Hohe Wurzel is a small mountain in Hessen, from which audio programs are to be transmitted from Rhineland-Palatinate, programs which are permitted there but which are not permitted in Hessen, although they can also be heard in Hessen.

8348
CSO: 5500/2481

FRG MINISTER HINTS AT SOVIET, CHINESE LAUNCHER FOR TV-SAT

Bonn DIE WELT in German 10 Mar 87 p 4

[Interview with FRG Minister of Post and Telecommunications Christian Schwarz-Schilling, by Gernot Facius: "Death Sentence for the Utilization of Modern Broadcast Media"]

[Excerpts] Federal Minister of Post and Telecommunications Christian Schwarz-Schilling (CDU) fears a major setback in media technology if the minister presidents of the Laender do not reach an agreement Thursday on the allocation of channels on the first direct-beam TV satellite. Schwarz-Schilling spoke with Gernot Facius.

[Question] What sort of financial charges are anticipated for the individual users in the lead-in phase?

[Answer] We have previously stated that we need annual fees amounting to between DM 25 and 30 million per transponder in order to be able to cover operating costs for TV-Sat. However, on this point we wish to accommodate the suppliers of the programs, since this move into a new phase of satellite television is a rather major one. We want to start the fees out using the basic data of current telecommunications satellite fees--around DM 10 million--and then over the course of the years increase these fees to the basic level of 30 million, whereby we assume a certain proportionality to the number of receivers.

[Question] A few things have gone wrong technically. If more things should go wrong, do you have alternatives?

[Answer] We have firms commitments with Arianespace for the launch of TV-Sat 1. There will be no changes whatsoever in that. It can only be hoped that current indications to the effect that we can count on a launch in August 1987 are accurate, and that it will be a successful launch. Naturally, we are also looking everywhere for a reserve satellite at this time. There are interesting offers, both from the United States and from China and the USSR. We will look into all offers, in addition to the one from Arianespace, of course. If the first launch of TV-Sat 1 does not come off, these offers will naturally become much more relevant. And in that case we will take a look at all these offers, depending on the world political situation. I believe at

any rate that over the course of the years we will be seeing worldwide competitive bidding in this area. If that is the case, then price, reliability and appropriate risk coverage will be the decisive points considered in awarding contracts.

[Question] There was some concern that in the USSR, for example, the customer has little or no influence.

[Answer] From what I hear--and the USSR is currently experiencing an extraordinary boom in orders for its rockets--the Soviets are also prepared to work under the constant supervision of the owner of the satellite. In this way, the possibility of espionage can be eliminated. The world political climate, developments in the USSR and German-Soviet relations will play a significant role in this. Given present developments--in terms of what is going on between the USSR and the United States, as well as the recently initiated German-Soviet ties--it is quite conceivable that this type of deal could be finalized in 1989, if it serves German interests.

12271
CSO: 3698/377

NEW STRUCTURE OF CGCT AFTER ERICSSON-MATRA DEAL

Paris LE MONDE in French 24 Apr 87 p 28

[Article by Francoise Vaysse]

[Excerpts] On Thursday, 23 April, Edouard Balladur announced that the General Telephone Construction Company (CGCT) had been turned over to the Swedish Ericsson and its French partners, led by Matra. An interministerial committee meeting was held on Tuesday, 21 April, to discuss the delicate matter, but Jacques Chirac took 48 hours to reflect before deciding. Whatever the case, only hours after that meeting, it appeared that the Swedish solution had been chosen despite last-minute American pressure (LE MONDE, 23 April).

Ericsson's buyout puts an end to the CGCT saga, after over 2 years of uncertainty concerning the future of that ITT subsidiary nationalized in 1982 by the socialists.

Actually, questions about the fate of the enterprise began in 1983, with the merger of Thomson-Telephone and CIT-Alcatel. The P and T [Postal and Telecommunications Administration], now having but a single supplier of telephone exchanges, tried to find a second supplier for France. The CGCT, being too small, did not develop its own equipment. The government therefore sought out a foreign firm that would provide its technology and buy it out.

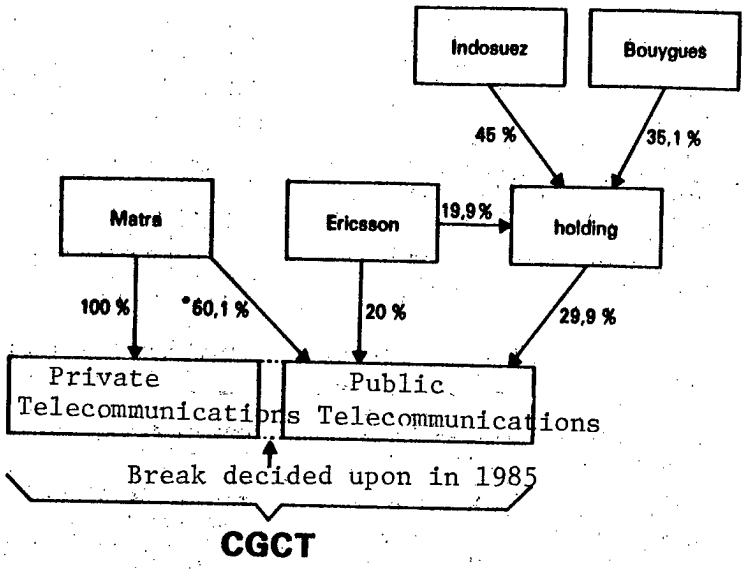
The world leader in the telephone industry, the American AT&T, very quickly joined the ranks. In exchange for its entry into the French market (16 percent owned by the CGCT), it pledged, as early as 1985, to buy $200 million worth of microwave relay equipment for 4 years from the national CGE (General Electricity Company).

But the Socialist Administration hesitated before this "American alliance." Appeals went out to European manufacturers, mainly to the German Siemens (No 3 in the world in the telephone industry).

At the beginning of March, the deadline for the filing of candidacies, the case had become quite obscure. It was at one and the same time technical: providing France with the best (industrial) telephone exchange and counterparts to the entry of a foreigner into the French telephone system, but diplomatic as well. The United States, apostle of an economic deregulation,

attaches extreme importance to the opening of European markets, particularly in the telephone field. What promises were made to the champion ATT? Whatever the case, several officials in the Reagan Administration brought their influence to bear in favor of the American candidacy. Nor did Siemens stand by idle. The Germans repeatedly brought pressure on French authorities at the highest level.

New Shareholders



* Including .2 percent for "friendly" investors.

Third Party

The German giant suddenly became concerned about the new dimension assumed by the CGE in the telephone industry after the buyout of ITT subsidiaries. Among the wedding presents, the CGE found the SEL (Standard Electrik Lorentz), the German jewel in the ITT empire that holds a third of the telephone market beyond the Rhine. The Germans therefore demanded the CGCT in exchange for the SEL, not hesitating to threaten the enterprise with reprisals. Nor was the American response long in coming: If Siemens gets the CGCT, they said, its interests in the United States would suffer.

At the heart of this French-German quarrel, heightened by cries of alarm from supporters in Europe, the French Government was increasingly embarrassed, for whatever its choice, the disadvantages would outweigh the advantages (LE MONDE, 20 March). Furthermore, the CGE -- soon privatized -- risked suffering from it. If Siemens were chosen, the CGE would lose its $200-million microwave deal. If the ATT were selected, the Germans could well put sticks into the wheels of its biggest European telephone subsidiary, especially since Siemens did not at all appreciate criticism of the performance of its telephone exchange by the French P&T.

Consequently, the idea of choosing a third party made headway. Unlike its two rivals Ericsson worked discreetly, staying away from any political pressure. The firm therefore appeared to be "neutral." Its equipment is good, already used extensively in several European countries and there should be no problem adapting it to French standards, which Ericsson knows well, having supplied the market for 70 years. Even the French P&T modified its position after the appointment of a new director a few months ago. Long an unconditional ATT supporter, it works actively in behalf of Ericsson.

In order to tip the balance in its favor, the Swedish giant agreed at the last minute to a gesture that satisfied both the French Government and its industrial ally. It proposed that Matra join with it in developing the future new-generation European radio telephone. Consequently, the candidacy of the Swedish firm enabled the French Government to emerge from its difficulties in putting the Germans and the Americans back to back, while keeping up the appearance of a European agreement.

Matra and Bouygues

Ironically, the Ericsson-Matra buyout made it possible to reunify the enterprise. Separated from the public telephone system, its private communication activity was sold in 1985 to Matra! It was a source of immense satisfaction to the man who, against hell and high water, held the CGCT steady throughout all the years of uncertainty, chairman of the board Claude Vincent, apostle of a reunification of his company and, from the beginning, an Ericsson solution. It was also a source of great satisfaction to the chairman of the board of Matra, Jean-Luc Lagardere, whom one finds allied with--another irony--his rival Bouygues, only a few days after the king of concrete had tricked him out of TF1. On the other hand, it was a bitter pill to swallow for Madelin and Longuet, openly favorable to AT&T. Once again, it was the opinion of the minister of state, minister of economy, finance and privatization, favorable to Ericsson, that won out on the industrial case. For its part, the AT&T suffered another failure in its attempts to go international, following its breakup in 1984. Even before the official announcement of the agreement, AT&T was readying its weapons to respond. The American Embassy in Paris put vigorous pressure on the French Government all day Wednesday to make it change its mind and AT&T threatened to file a complaint because Ericsson was able to modify its bid after the official filing of dossiers. Another loser--but to a lesser extent, the CGE, deprived of its microwave relay market, advantageous to the French firm, definitely, but not indispensable to its existence.

The Swedish solution appears to be the wisest, but it risks unleashing the American thunder. Whatever the case, France's image after so many "hesitation waltzes" is not at all enhanced by this poor industrial vaudeville.

11,464
CSO: 5500/2499

MINITEL DEVELOPING DEFENSES AGAINST FRAUD

Paris LE MONDE in French 4 Feb 87 p 21

[Article by Philippe Apter: "Minitel Thieves"; first paragraph is LE MONDE introduction]

[Text] Behind all break-ins there is always "human"communication.

Computer crime is not new. But the public's access to home information services via minitel terminals has given rise to practices that were, until recently, quite rare in France. Crimes range from simple fraud aimed at reducing bills to attempts to steal files, which could have disastrous consequences.

Certain minitel users attracted by the Kiosque service (Teletel-3) and its erotic electronic bulletin board painfully received the first bill. And they discovered that next to Teletel-3, accessible through the 36-15 code, was Teletel-2 (36-14) with less prohibitive rates. Well, several Kiosque services are--or were, since precautions have now been taken--accessible through 36-14 by entering a digital code. This was a confidential code, but with a little cunning and luck one could determine it. Since kindhearted pirates even shared their findings via electronic mail, fraudulent access increased until the database hosts found effective solutions. This crime has now become negligible.

Some users then found something even better: charging their connect time to others. To do so, they call the service normally, but instead of using it as intended, they enter into direct communication with the computer that manages the system and instruct it to call another service. Some knowledge is required, as well as quick fingers, but if the host computers are of the same type, chances of getting the crosslink are good. One can then use the second service and have the bill sent to the first. At Prime they realized that it was relatively easy to crosslink the host systems and have designed protective software which zeroes in on these attempted thefts, disconnects the unscrupulous user, and does not allow him to call the service back.

Database services have in the past reacted in a rather haphazard manner, but now they are working together and comparing methods. Users of Prime systems met on 15 January to discuss this among other topics. They found that "human communication is always at the heart of every break-in." Passwords and other

access keys are divulged, voluntarily or otherwise, by the operators themselves. Experts therefore stress the danger of exchanging "confidential data." If that were stopped, it would become practically impossible to break into a well-protected computer.

Luck and change remain. Security measures cannot eliminate this factor, they can only reduce it. The videobank service of Credit Commercial de France [CCF], for example, considers that the risk factor is limited to one in 56 billion. Such protection is indispensable for a host computer which authorizes financial transactions, because pirating will now concentrate on this area. The future of the minitel lies in financial and commercial transactions. In this area security must be complete. The millions of francs that will soon circulate via minitel will attract pirates other than those who are currently operating out of intellectual interest alone. Pirating methods will also change. The threat: wiretapping.

Reconstruction of Passwords

It would serve no purpose to establish double or even triple codes for entry into the system if the access keys can be discovered at any time. A little intelligence, a bit of know-how, a simple tape recorder, and a great deal of dishonesty are all you need. When a computer thief finds the telephone line of a financial host computer user, he can install a branch connection and connect a tape recorder. When the client of the bank (or of any other service where money changes hands) communicates with the online account, he enters the passwords and access keys. The tape recorder registers them and the thief can reconstruct this "electronic conversation" with the aid of a microcomputer. He now has only to link up, give the new-found passwords, and make off with the money.

This scenario would be the joy of a film producer, but it is not just a story. The risk is real and the experts know it. Until recently, the anticipated solution was the smart card. In addition to the cardholder's access codes, this piece of plastic contains information identifying him personally. When connected to a minitel, this card permits positive identification of the account user and thus prevents misappropriation of funds. The only problem is that a card reader must be installed next to each minitel. The General Directorate of Telecommunications is planning installation of this type of device.

However, not everyone agrees on the advantages of the smart card. Rene Riffard, director of the home banking service of Credit Commercial de France, thinks that "using this card is putting all your eggs in one basket, or basing your entire defense on a single foundation." CCF has therefore designed another type of protection. After 5 years of research, the system has just been unveiled.

It looks like a normal phone jack (the plus connecting the telephone to the wall socket) and it attaches directly to the minitel. CCF has not yet given

it a name. For now, they are calling it the "coding system." Its principle is to transform the minitel (a simple terminal) into an "intelligence" machine. In a way, it acts like a Canal Plus [pay-TV channel] decoder: It codes and decodes information. When a minitel user logs into his banking account (for example), he enters his passwords. The CCF coding system then replaces these passwords with a series of numbers which depend on the time of day. Anyone who tries to record from the phone line will find only a jumble of numbers and signs. Even if the hacker manages to reconstruct the initial password, it will be of no use to him. When he tries to log on with the information that he has just obtained, the coding system will have already changed its combination of random numbers; it will reject the thief.

CCF has developed this system to the point of roguishness. If someone tries to open the box to analyze the integrated circuits inside, the system self-destructs.... Rene Riffard has only one regret: "I would have liked the box to smoke when it self-destructs," he said.

The device, still at the model stage, remains to be mass produced and marketed. CCF does not want to keep the invention for its exclusive use. In fact, this protective device will be in direct competition with the smart card. From the financial viewpoint, Rene Riffard maintains that his system is clearly cheaper. If his calculations are right, the decision for wide-spread use of the "coding system" then becomes a political problem. But that is quite another story.

25052/12851
CSO: 5500/A025

MOBILE RADIO TELEPHONE SYSTEM

Paris MESSAGES in French Mar 87 pp 10-12

[Article by Denise Frilloux: "A Private Line on Board"]

[Text] The radio telephone system in the Parisian region is saturated. The 200-Mhz band providing connections is overloaded. Applicants must now wait until April.

Gone is the day when telephones were seen only in moviestars' Rolls Royces. A luxury gadget in the beginning, the car phone is now an indispensible piece of equipment for businessmen and executives, even for drivers and road mechanics of the same company. The radio telephone in France is the victim of its own popularity and success and certain technical limitations. The radio frequencies reserved for it are now inadequate.

And yet, the most recent French system, Radiocom 2000, has turned out to be the least greedy (in terms of frequencies) in the world. It uses half the number of the British system, for example, but in Great Britain, radio telephones have four times more frequencies, making it possible to handle 120,000 subscribers, rather than 22,000 as in France. It is true that for Telecoms, the modernization of the system and the widespread use of the minitel had previously constituted more urgent priorities.

Gerard Longuet has just decided to give development of the radio telephone a boost, in particular, by opening up the market to competition, scheduled for late 1988. A single private operator will be authorized to install car phones. It will have its own radio network and use the telephone switching system needed to handle most communications. The future operator will decide its rates but will have to pay Telecoms an entry and user fee for the system.

In the meantime, radio telephone bands must be expanded. "At the present time, Telecoms is in a bind between audiovisual frequencies and those granted to national defense," says Jean-Bernard Levy, technical adviser to the minister. "The private operator can go national only if we can free up frequency bands, which at the same time will enable Telecoms to increase the number of its subscribers."

Henceforth, for Radiocom 2000, the general department of Telecoms has decided to double its goal this year, accepting 25,000 new subscribers.

In order to relieve the saturation in Paris, types of subscriptions will be readjusted and adapted to demand. To date, a subscriber in the provinces wishing to call from a region other than his own had to take out a national subscription, which automatically included Paris and its region. Starting in April, he will be able to have a provincial subscription (which will no longer include Ile de France) at a competitive rate (3.65 francs a minute).

The Ile de France regional subscription will naturally be maintained and regional subscriptions expanded, such as those in Vallee du Rhone (the Lyon-Marseille route) and the "special southern highway" (the Paris-Lyon-Marseille-Toulon route). Radiocom 2000 capacities should reach 200,000 subscribers by the year 1990.

At the present time, 84 radioelectric relays provide coverage of the country. One relay services a cell (a hexagonal portion of territory of about 30 km) and handles communications of a thousand vehicles. By the 1990's, there will be some 500 relays covering 85 percent of the metropolitan territory.

Today, Radiocom 2000 has 9,500 subscribers, with 6,700 in the Ile de France region alone: business executives and management personnel (78 percent), businessmen (10 percent), tradespeople and doctors.

Radiocom 2000 provides either a "conventional" car telephone service (80 percent of all subscribers) or the establishment of business networks so that the different vehicles of a fleet may communicate with one another or with company headquarters on a so-called "private" radio system, with some able to enjoy combined service with access to the telephone system.

For the second operator of the radiotelephone, a call for bids will be issued by the minister in the spring. Two groups have already organized as candidates in order to develop an analogous radio telephone system similar to Radiocom 2000: the Lyon Water Company-CGE (General Electricity Company)-Motorola group and the General Water Company-Jeumont Schneider-TDF group. The minister will choose the group offering the best use of frequencies granted, the most credible project in technical, financial and commercial term, and above all, the broadest geographic coverage.

Radiocom 2000 Program

The 11 zones opened up: Paris-Ile de France, the Loire Valley, Brittany, Rhone-Alps, Provence-Cot d'Azur, Nord-Pas de Calais, the central region, Lorraine, Alsace, Picardy (with Amiens, Roye, Creil) and Bourgogne.

The 10 zones to be opened up this year: Aquitaine (May), Auvergne (Clermont-Ferrand, March), Lower Normandy (March), Champagne-Ardennes (April), Franche-Comte (June), Upper Normandy (March), Languedoc (with Montpellier, Nimes, Orange, April), Limousin (Limoges, March), Midi-Pyrenees (May), and Poitou-Charente (July).

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CSO: 8019/3773 A

CSELT PLANS TO MODERNIZE TELEPHONE NETWORK

Rome L'ESPRESSO in Italian 22 Mar 87 pp 186-190

[Article by Frederico di Trocchio: "The Telephone is Ringing: STET Group Research Report No 3"]

[Text] The Italian telephone system is the most backward in Europe. But industry officials insist that current high technology will reverse the situation by 1995. However, initial installations leave some room for doubt.

What will the telephone of tomorrow be like? It may seem to be an idle and even offensive question to those who must, day in and day out, deal with falling lines, continual interference, broken equipment, impossible connections and long waits for installation. Not to mention the sheer aggravation that SIP [Italian Telephone Company] has inflicted on its helpless customers. Was it an irremediable disaster?

Experts from STET [Telephone Finance Corporation], which manages the public sector in telecommunications, and IRI [Industrial Reconstruction Institute] (on which SIP also depends), say the situation is not hopeless. They note that in this area Italy is experiencing a veritable information paradox: the telephones don't work, but telecommunications research is setting an international standard and is indeed in the forefront in every sector. This optimistic scenario does not correspond to the daily experience of the man in the street, but it predicts that people should begin seeing results within a few years. Engineer Alfonso Graziani, head of SIP strategy and planning, says, "Our telephone system will catch up with the French, who now have the best system in Europe." Research, then, is expected to cure the ills of Italian telecommunications, which involves not only the household telephone but also telex, telefax and data transmission, all technologies in which Italy is behind relative to the other industrialized countries.

But is this optimism justified? To find out what our telematic destiny will be, we visited the STET group research centers, which include not only the companies (SIP, Italcable, Telespazio) that jointly manage the ASST (National Telephones State Board), which is Italy's telecommunications network, but also the largest manufacturing companies in the industry (Italtel, Selenia, SGS, Elsag [San Giorgio Electronics, S.A.]).

STET research is done partly by a single, central agency for the whole group: CSELT (Telecommunications Research and Study Center), in Turin, and partly to

centers created by individual companies for the development of projects closely related to their own operations. With a budget of 60 billion lire and 600 researchers, CSELT is a bit undersized compared to other European centers. The French CNET (National Center for Telecommunications Studies) has 3,800 researchers, and the British BTRL (British Telecom Research Laboratory) has 1,800. CSELT's mission is to develop "corporate" type pilot projects for all participants in the STET group. Its job is to to invent the components, machinery and strategies that the industry may decide to develop in its own research labs and eventually put on the market in the next ten years. CSELT's crystal ball shows the future of Italian telecommunications, and we have looked into it.

Engineer Basilio Catania, the general director of CSELT, explains: "The future of the telephone began some years ago, when telecommunications began to be digitalized. At first, speech was converted into electrical impulses modulated by the sounds made by people talking on the phone. Now, however, speech is converted into digital impulses, that is, broken down into numbers in variable sequences of so many ones and zeroes. It is the same language computers speak. At the beginning of the 1980's, we who are working in the industry realized that this identity of language was showing us the way to the information society we had been dreaming of: the union of the telephone and the computer. The digital telephone with its push-buttons is more elegant and convenient than the old dial phone, and present telephones work in ways basically different from electromechanical ones: in going from one telephone to another our voices are processed in ways analogous to those used by a computer."

Will this method make our telephones more efficient? "Not only that," says Catania, "but the installation of digital telephones is creating a new communications system around us, the ISDN (Integrated Services Digital Network), which uses the same system to transmit voice, sound, pictures, radio messages, facsimiles, telex and slow video, that is, still images 'updated' every few seconds."

CSELT already considers this network, which is expected to go into use in Italy in 1995 (see "SIP without a Network," below), as being outdated. They are already thinking about what comes next. They are planning hardware and, especially, software that will enable the system to become increasingly intelligent. This means that telecommunications exchanges will process speech transmitted over telephone lines in order to furnish documentation and automatic billing and distribute our messages to the users we specify with the appropriate telephone number. If we go to another telephone than our own, incoming messages can be automatically transferred to this new number (if we say so); the telephone display screen will show the number of origin of incoming calls, the number we are dialing, the time, and our own lists of frequently called numbers.

Catania adds, "We are also working on incorporating artificial intelligence into the telephone, first of all to synthesize and recognize voices." In short, it will be a return to the good old days of female operators. We will again be talking with the telephone exchange, but instead of getting a pretty blonde on the line we will be talking to silicon chips, and the voices will be artificial. In exchange, we will be able to communicate much more information than before. We will even be able to tell the telephone, without lifting a finger, "Call Mario at his home, please."

CSELT plans eventually to integrate the cellular system of automobile telephones ever more closely into the public telephone system. Thus, the home phone can go along on a picnic. And satellites will play an ever larger role in Italian telecommunications. They will no longer merely reflect signals and data, they will have miniaturized telephone exchanges on board. The first prototype is ready. The on-board and ground-based antennas will be less unwieldy and more powerful. In this area, the Turin research center recently achieved a notable success with the development of dicrucial areas, a technical advance that makes it possible to use more than one communications channel on the same antenna.

On a more distant horizon there is the IBCN (Integrated Broadband Communications Network) based on optical-fiber technology. By the end of the century it will be bringing into the home worldwide television, data, facsimiles, immediate transcripts of telephone conversations, the picture of the caller (a videophone prototype has already been built), a video newspaper and various information items in "capsule" form or as detailed as we wish.

It is the European answer to the Japanese NTT (INS—Information Network System) and the American ATT (UIS—Universal Information Services). The completed project is to be turned over to industry in May 1991. CSELT researchers will work on it under the direction of engineer Mario Muccinili. In addition there will be researchers from the other 108 European centers that have joined the RACE [Research in Advanced Communications in Europe] program, for which the EEC has provided 1.2 trillion lire in financing. "If we give the go-ahead," concludes Catania, "we can overcome our technological dependence on the Americans and Japanese and go on the counterattack in their own markets."

"But in the field of private communications, that is, in business telephones," says Maurizio Decina, age 44, engineer and professor at the Milan Polytechnic Institute and director of research at Italtel, "penetration of the American market is already imminent. In the fall we will present the first fruits of our research in this sector: SUIP (Small Plant User Systems). It a private telephone and much more besides. It is software in a computer capable not only of managing telephone conversations but also high-velocity data transmission, digitalizing and memorizing spoken messages and interfacing data transmitted in various languages. It can carry up to 600 lines.

"It has been preordered months in advance by American clients," says engineer Alberto Nicoletti, technical director of the St Mary Capua Vetere Italtel plant, where 120 researchers led by engineer Piercarlo Ravasio have already created a prototype.

Decina says with some pride, "We are in fierce competition with about 40 others to penetrate the fast-expanding private telephone sector in the American market, and our success is the most obvious sign of how important research has been in giving Italtel new impetus."

Decina considers himself one of the leaders in Italtel's leap forward. With men such as he, deputy administrator Marisa Bellisario succeeded in bringing the company back into the black in 1983. Bellisario is the quintessential research manager: American technological efficiency transplanted to the Castelletto di Settimo in Milan. He supports academic culture, but he does not like "paper-oriented" research, which only produces paper; he prefers that which makes products. He is the father of the present Italtel research team (2,000

researchers in various laboratories). At its heart he has put a center of software production for planning systems management that is unequaled in Europe. "Large research programs," he says aggressively, "cannot be managed with pencil and paper. The work of 2,000 people cannot be successfully administered by using traditional methods: we need computers and software adapted to the task. This is how we finally succeeded in carrying out the Proteus project, which was started in the 1970's and almost ruined the company with continual delays and unprofitable refinancing.

SIP without a Network

The taillights of the STET group are the management agencies: SIP and Italcable, the main sources of Italians' psychological distress. Why is SIP in such doldrums? And when will the telephones start working?

We know why. President Michele Giannotta and administrative assistant Paolo Benzoni have explained it repeatedly in the newspapers in recent months. They say that because of the rate freeze of the mid-70's SIP no longer has the money to keep up with technological innovation. Good budgets and bad telephones. This has been SIP's policy for the last 10 years.

While other countries were moving into electronics, we were still installing electromechanical units. The first French "electronic" installations go back to 1972. Four years later, West Germany joined in, as did England in 1981. On the other hand, Italy continued to install the old telephones up through 1983. SIP discovered the new models only in 1984 and is asking us to wait till 1995 to make up for lost time. "At that time," guarantees engineer Alfonso Graziani, head of SIP's strategic planning, "the ISDN network will go into use throughout the country, and it will provide Italians with not only reliable telephones but also many new services." Engineer Roberto Parodi, of SIP Research and Development, says, "An initial pilot project will be tried by 1988. A new network will link 2,000 users in 7 Italian cities: Milan, Turin, Venice, Bologna, Pisa, Rome and Naples."

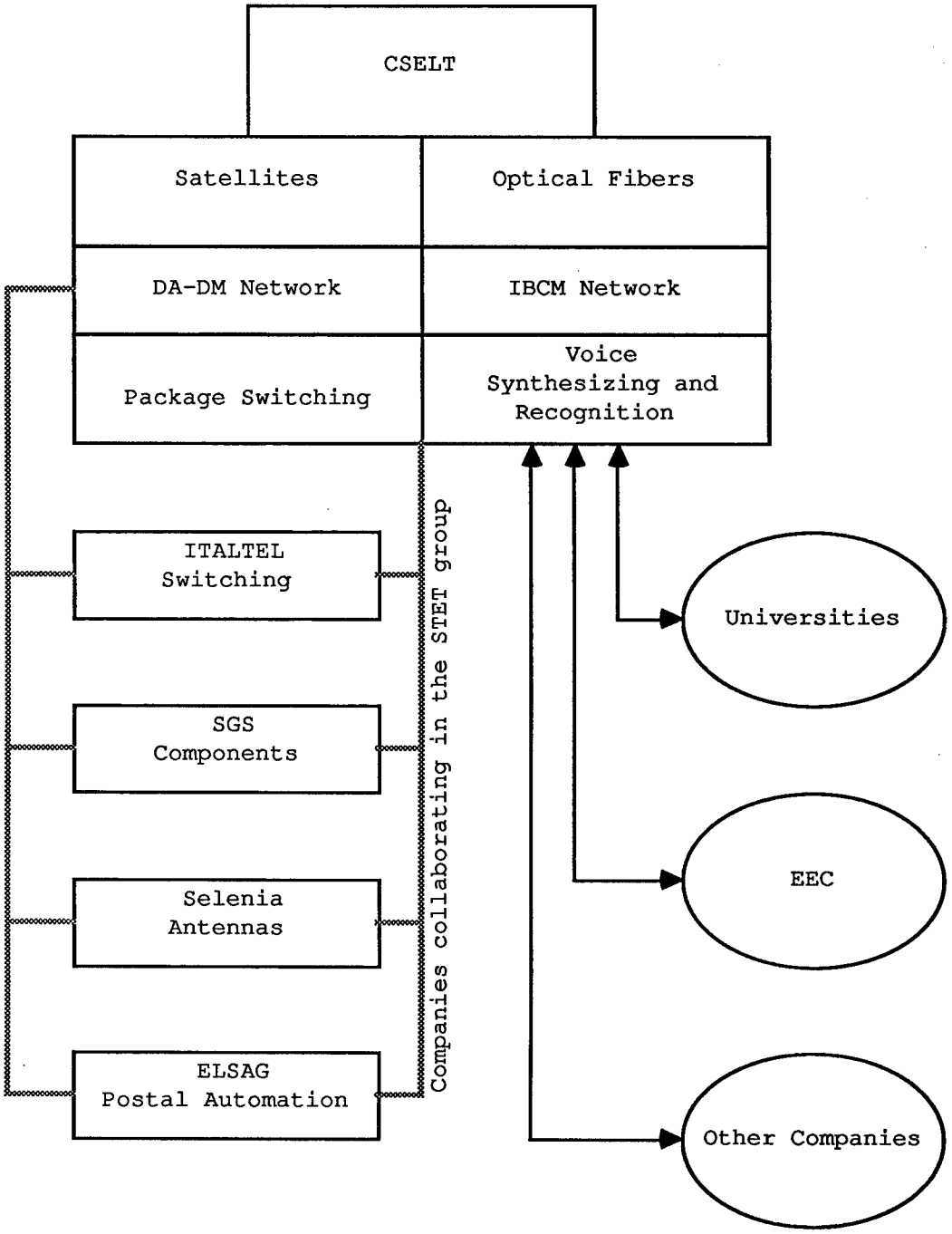
In 1991, the "lucky ones" will number 30,000. On the other hand, the transition from an analogical to a digital system will be much faster. Even here, though, we will finish far behind the French, who plan to complete "digitalization" by the year 2000, but we will be ahead of the Germans and will catch up with the English by digitalizing 75 percent of our network. But can we really be sure that the telephones will be working better by 1995? There is reason to doubt it. Several electronic exchanges have already been installed (only 335 of those supplied by Italtel are as yet in operation), while Venice is already completely served by Ericsson electronic telephones. However, nobody has noticed; it's just business as usual with some extra malfunctions.

But everyone is making it clear that solving the problems will take more than merely handing over to the telephone company the results of new technology. The exchanges must be installed and managed. And the generally bad service of our network is also due to the inefficiency and inertia of its technical personnel and others.

British Telecom, the English SIP, publishes a bulletin every 3 months with statistics on the number of emergency calls, customer complaints satisfied and help given by operators. The German FTZ and the French PTT [Postal and Telecommunications Administration] do the same thing. Some 70 percent of

telephone malfunctions in Germany and 80 percent of those in England are repaired the same day, while 83 percent of those in France are repaired in 48 hours. SIP says that on the average at least 50 percent of malfunctions are repaired within 24 hours. Obviously, all our telephone troubles have fallen into the other 50 percent, for which SIP did not mention the time needed to make repairs. In short, SIP has not been doing the job, and President Giannotta has announced that some maintenance divisions will be transferred to private installers. Will it be necessary to turn to private companies to ensure that the sophisticated network promised for 1995 will work?

[A chart showing STET research organization follows]



The chart shows the organizational structure of STET research. Production-oriented research (projects of 5 years maximum duration) is carried out by individual STET associates, mainly SGS, Italtel, Selenia and Elsag. CSELT handles group projects (less than 10 years duration). Many projects are carried out in collaboration with the CNR [National Research Council], universities, polytechnic institutes and foreign companies such as IBM and Siemens, or for the EEC.

8782
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ELEKTRISK BUREAU EMPHASIZING TECHNOLOGY IN FOREIGN SALES

Oslo AFTENPOSTEN in Norwegian 24 Mar 87 p 41

[Article by Morten Woldsdal: Growing EB Wants To Concentrate Efforts Abroad"]

[Text] EB president Kjell E. Almskog is announcing new company acquisitions in the next few years. But he is primarily interested in foreign companies. The EB management hopes to be able to introduce the company to the London stock exchange next year.

Yesterday, Elektrisk Bureau presented the final financial statement figures for 1986 which are not that much different from the preliminary figures. Sales were 3.3 billion kroner versus 2.9 billion the previous year. Profit before annual balance sheet dispositions inccreased from 68 million in 1985 to 182 million in 1986. This resulted in earnings per share of 24.40 kroner versus 14.40 in 1985.

Elektro Union (EU) which will be part of the EB group starting in the new year is not included in these figures. It had sales of 2.5 billion kroner, and profit before annual balance sheet dispositions was 108 million.

Last year 1.1 billion of EB's income came from sales abroad. After the merger with Elektro Union and the acquisitions of Lehmkuhl and NEK Kabel, EB management expects sales of approximately seven billion this year. Approximately 2 billion kroner will be income from exports.

Strong Growth Abroad

Company president Almskog expects a continued strong EB growth in the coming years. However, he feels that most of this growth must come from abroad. And the goal is quite clear: In the course of 5 years 50 percent of sales will come from outside Norway. This means that the company must increase its foreign sales by several billion kroner in the next few years.

"This is a tough, but not unrealistic goal," he says. Almskog points out that in Norway EB concentrates on having as broad a product line as possible. "However, abroad we must concentrate on those products we are really good at. We must pick out three or four key areas where we can be in the front ranks internationally, " he points out.

New Acquisitions

He continues to say that it is much less costly to buy existing companies than to build up new enterprises from scratch. Because of this, he feels, there may be several EB acquisitions abroad in the future. "But we will not grow just for the sake of growth. We clearly require that profitability increases at the same rate as sales, that is to say that we earn money just as quickly as sales increase," he emphasizes.

Almskog tells that EB is thinking of going to the London stock exchange next year. A decision about this will possibly be taken during 1987. In such a case there is talk about launching B shares without voting right. "We are not considering New York for now. Maybe next time," Almskog smiles knowingly when asked about EB and the New York stock exchange.

No More Purchases in NEK

He says that EB did not buy more than last week's 50 percent of NEK Kabel. "We reached our goal. And it will not be troublesome for us if the other shareholders do not want to sell," he says, and he adds: "We offered to buy out the other shareholders to ahdere to stock exchange rules and be good boys."

In connection with 1986 profits the company president states that none of EB's activities is losing money now. EB TeleCom and EB Norsk Kabel show satisfactory profitability. "Even if EB Nera makes a profit, there are still great opportunities to improve the numbers for this part of the company," he says.

Not Pleased

As to EB overall Kjell Almskog points out that management is not at all pleased with last year's profits. "We are nevertheless satisfied with the considerable improvement in profits. But we still see many opportunities for improvement," he points out.

During this year EB will carry out a substantial restructuring of the company. A separate holding company will be established with a number of independent subsidiaries. According to Almskog this will provide a still more effective, efficient and clear organization. Today, EB is one of Norway's largest companies with more than 10,000 employees.

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FIRM EXPORTING FIBER OPTIC CABLE TO UK

Oslo AFTENPOSTEN in Norwegian 7 Apr 87 p 46

[Article by Ragnhild Moy: "Fibo Factory Working "Smarter"]

[Text] The Fibo Factory in Lyngdal is working "smarter", and this has resulted in record profits this year. The secret lies largely in what managing direcctor Sverre Schjott Steen calls innovative leadership and in addition a strong concentration on cooperation on the part of employees. The firm has managed to reduce work hours without hiring more people and has increased productivity at the same time.

"We have our own form of innovative leadership. We are operating with leaders who are prepared for change, and this we need when we have a government which makes it as difficult as possible to run a business," Schjott Steen tells AFTENPOSTEN.

But he puts equal emphasis on the involvement of the other employees. Group meetings across the organization and the individual's participation in areas where his or her strengths lie stimulate the willingness to apply oneself and increase productivity.

Laminated products, e.g. bathroom panels, bench plates and screen walls are products from the factory which are sold both to the shipping market and the construction industry. The company is the only Norwegian producer of high-pressure laminate.

The construction industry is a particularly tough market, and ingenuity and market leadership are essential to achieve results. 1986 was a record year for the firm with gross sales of more than 86 million kroner, approximately 26 percent above 1985.

Profits before annual balance sheet dispositions show a surplus of 11.5 million. This is more than 13 percent of gross sales. The company profit after interest expenses, depreciation, and extraordinary items was approximately 8.4 million kroner.

The firm exports 15 percent of total sales. As a percentage, exports decreased, but not in terms of kroner. The reason is a strong incrase in sales in Norway.

"But with the more difficult economic times we see ahead, the firm will concentrate more on exports and product development." For this, Schjott Steen has budgeted an increase of more than ten percent this year.

Great Britain is the largest export market, and bathroom panels account for much of this, in particular, the Fibo factory has gained a strong foothold in the British hotel market and has just signed good new contracts.

Otherwise, it has been a good year in the shipping market, where the firm supplies bulkheads and ceiling panels, and according to Schjott Steen it looks as if this will continue in 1987.

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PARLIAMENT REJECTS ATTEMPT TO LOSEN TELECOMMUNICATIONS MONOPOLY

Oslo AFTENPOSTEN in Norwegian 7 Apr 87 p 7

[Article by Thorleif Andreassen: "Small Changes in Tele-Monopoly"]

[Text] Televerk will continue installing regular phones. Previously, the non-socialist parties had pointed out that Televerk's area of responsibility should end at people's outside walls. But in yesterday's Storting debate the Progress Party was left alone regarding the Willoch government's proposal for a separation between Televerk's area of monopoly and competition. This means that Televerk will not lose a single centimeter of its monopoly, regardless of how thick the foundation walls are in the house where a telephone will be installed.

Particular emphasis is placed on the fact that this way consumers will have a uniform supply service system in all parts of the country.

The subscriber will have the opportunity to determine where the outlet will be placed. And if people want to have several phones, they will have a chance to buy and install approved phone models from private firms. For senior subscribers Televerk will continue to have maintenance and replacement agreements, while it will have the usual warranty responsibility for new subscribers.

Transport minister Kjell Borgen felt that the solutions should be acceptable to most people. The cabinet placed great importance on the fact that the arrangement is the same for the whole country.

Turn-around

Carl I. Hagen (Progress Party) said for his part that Televerk's monopoly position could not be tolerated. He expressed his dissappointment over the non-socialist parties which he claimed had turned around in this matter.

"They gave up everything that could open the way for increased competition within the telecommunications field. The Willoch government agreed to stop Televerk's monopoly outside people's walls. This allowed for competition for all installation within the walls. This is in reality a solid victory for the Labor Party and the Socialist Left Party," the Progress Party leader said. He

put forward a proposal that the Willoch government's proposal to regulate a separation of Televerk's monopoly and competition area will be used as a basis. This proposal received only the two Progress Party votes.

The Foundation Wall

Carl Fr. Lowzow (Conservatives) pointed out that a unanimous transport committee approved that the border between Televerk and the subscriber runs along the foundation wall.

"For most people the termination point will naturally be inside the building, but other points can be selected if the customer so wishes. Subscribers who only use lines for conversations will all have the same supply. They can decide themselves where the outlet should be placed. They can decide on the routing within the four walls themselves or let Televerk do it. In larger dwellings the network for TV, radio, alarms and controls such as door openers or internal communication systems can be combined and installed by private installers," Lowzow pointed out.

Firms

As to company in-house networks the assumption is that the telelphone network is only a small part of a modern firm's internal low voltage consumption. The introduction of telephone, telex, data and future service-integrated digital networks will be a major part of the firm's planning. It is pointed out that termination will be at the location where the customer wants it. Various units in such a network will be offered by Televerk, but could also be part of an equipment solution the company has chosen.

Competition

This allows for competition in the telecommunications equipment market. A majority in the Storting emphasizes the importance of Norwegian providing research and development circles and tele-equipment related industries with reasonable growth opportunities.

In yesterday's debate several speakers pointed out that information science has been singled out as a particular key area. As to the competition from foreign suppliers in the delivery of tele-equipment to the Norwegian market a joint transport committee feels that the ministry must help ensure that Norwegian industry receives corresponding opportunities to compete.

A separate proposal regarding Televerk's independent competing company will be put forward. Its establishment has already been approved. In the spring another proposal will be put forward regarding the cable TV network and the rate scale for telephones.

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BRIEFS

DATA COMMUNICATIONS NET--Ask the data terminal first and dig safely afterwards. Televerk is planning to place its complete cable network by data, and it is now in final negotiations with the data firm SysScan to place a map system which will cost 150 million kroner, BERGENS TIDENDE reports. Televerk will provide precise information on the placing of the cables across the whole country and counts on data technology. An agreement between the state institution and the data firm will become one of the largest software contracts ever made in this country. [Text] [Oslo AFTENPOSTEN in Norwegian 3 Apr 87 p 36] 12831

CSO: 5500/2487

BRIEFS

DIGITAL EQUIPMENT FROM ERICSSON--The telecommunications agency of Spain, Telefonica, is going to purchase telephone equipment from Ericsson Information Systems for 90 million kronor. The order includes delivery of digital telephones and adapters for linking of computers with the telecommunications network. [Text] [Stockholm DAGENS NYHETER in Swedish 29 Apr 87 p 14] /9274

CSO: 5500/2501

TROUBLES EXPECTED AHEAD FOR ERICSSON AS MAIN OWNERS DUEL

Stockholm DAGENS NYHETER in Swedish 12 Apr 87 p 15

[Commentary by Sven-Ivan Lundqvist: "Peter Wallenberg 'Ran Down' Hans Werthen. End of Ownership Tranquility at Ericsson"]

[Text] Peter Wallenberg has "run down" Hans Werthen in the latter's negotiations with Italy and Spain. Peter Wallenberg also accused Jan Wallander indirectly of having broken a 1963 agreement which said that the Handelsbank (SHB) and the Wallenberg group were to retain the already acquired number of voting shares in L.M. Ericsson and not increase them.

We have to go back to the 1930's in order to understand 1987's worry in the ranks. At the beginning of the 1930's, the Kreuger concern borrowed eleven million dollars from the American telecommunications company ITT and gave A and B-shares in L.M. Ericsson as security. These pledged shares represented 30 percent of the capital and all of 50 percent (!) of the votes.

As early as 1933, the year after Kreuger's death, Marcus Wallenberg negotiated a solution, which led to the decrease of ITT's voting power in L.M. Ericsson to 30-35 percent. As far as voting power was concerned, the SHB group was then the next largest. The Wallenberg group had a modest 6.6 percent of the votes.

But from 1933 on, as much as a third of the votes rested abroad with L.M. Ericsson's worst competitor. Shortly after the Second World War, Marcus Wallenberg's investment company, Investor and Providentia, purchased more A-shares. In 1948 a contract was made between Wallenberg and the Handelsbank, the gist of which was that neither party was to increase its ownership of A-shares. In 1960, Marcus Wallenberg (1899-1982) managed to buy back the ITT-shares for Sweden. The powerful voting shares that had been owned by ITT were distributed among the Wallenberg group and Industry Values (Industrivarden) in such proportions (i.e. more to Wallenberg) that the Wallenberg group now had slightly more votes than SHB. Furthermore, about 200,000 A-shares were sold to the general public. The repurchased B-shares were sold abroad.

On November 30, 1963, an agreement was made between Ernfrid Browaldh (1889-1982), chairman of the Handelsbank, and Marcus Wallenberg, chairman of the board at L.M. Ericsson, saying that the power over Ericsson was to be divided between the Wallenbergs and SHB. That is how it is today. Investor and Provi-

dentia together own 22.3 percent of the votes in L.M. Ericsson. Industry Values also owns 22.3 percent of the votes. In 1963 then, the agreement meant that the Wallenberg group (including foundations) were to have 593,000 A-shares and the SHB group 533,000 A-shares.

This agreement was far-reaching where L.M. Ericsson's banking business was concerned. It was stipulated that it should be equally divided between the two banks.

To the general public, L.M. Ericsson was a Wallenberg company during the 1960's and 1970's. Marcus Wallenberg was outwardly dominating. As far as ownership and banking matters were concerned, however, L.M. Ericsson was in fact divided between the Wallenbergs and SHB.

Related Interests

These columns show, however, that the Wallenberg group and the SHB group, respectively, consist of more units than the three investment companies mentioned. For instance, the Knut and Alice Wallenberg Foundation. For instance, the SHB employees' foundation, the Octagon. A number of various members of the Wallenberg and SHB groups, respectively, (as they are defined by DAGENS NYHETER) are not formally included in the 1963 agreement, even though the principle of the agreement reasonably includes even "related interests."

At the beginning of 1987, the number of votes in L.M. Ericsson were divided as follows:

	% of votes
SHB group	35.5
Wallenberg group	28.9
Fourth AP Fund	8.6
S-E-B group	4.0
Skandia	3.1
SPP	2.3
Total	82.4

(S-E-B = Skandinaviska Enskilda Banken; SPP = extension unknown)

Consequently, in January of this year, the SHB group was a few percentage units larger than the Wallenberg and S-E-B groups together. But the difference was not large enough to spoil matters. It did not openly quarrel with the principle of the 1963 agreement.

Skandia Sold

On the sixth of March this year, however, Skandia sold its 3.1 percent of the votes to the SHB group. The affair was not made public until March 9. Now the SHB group had reached almost 39 percent of the votes. To all appearances, Skandia sold without knowing that the SHB group was the buyer. And without Bjorn Wolrath, president of Skandia, being involved.

The person handling Skandia's daily share activity had neither studied nor engaged in the voting percentage figures in Ericsson, but had carefully studied the difference in the market rates between Ericsson's A and B-shares. Skandia's shares in Ericsson were sold when the difference between the A and B-shares was about 100 kronor. (Today the A-share is worth about 170 kronor more than the B-share.)

Order Restored

SHB's purchase of Skandia's Ericsson-shares obviously irritated Peter Wallenberg. At the ensuing meeting of the board of directors at L.M. Ericsson, his irritation was apparent to his board colleague, Jan Wallander, chairman of the board at the Handelsbank. Wallander felt that the Skandia-business was unimportant, i.e. it did not conflict with the principle of the 1963 agreement.

Peter Wallenberg was not content with the answer. He and the chairman of the board, Hans Werthen, went directly to the president of the Fourth AP-fund, Sten Wikander, and asked to buy the Fund's 8.6 percentage units of votes. The deal was made (probably at a premium) and order was restored as far as Peter Wallenberg was concerned. The mass media made note of the deal and Jan Wallander commented on it, saying that everything had proceeded on friendly terms. That is not how it was. (Jan Wallander would deny that he had been in a fight even though he were bleeding and had lost some of his teeth.)

So today there is the following ownership picture at Ericsson:

	Percentage share	
	Votes	Capital
SHB group	38.4	4.3
Wallenberg group	37.5	4.6
S-E-B Pension funds	4.0	0.4
SPP	2.3	1.3
Total	82.3	10.6

Consequently, with less than 10 percent of the capital, a little over 500 million kronor nominal value for the SHB group and the Wallenberg group, respectively, the principal owners control close to 80 percent of the votes. The figures mean that the Wallenberg group and the S-E Bank's pension funds today control 41.5 percent of the votes as opposed to the SHB group's 38.5 percent. It also means that SPP with its 2.3 percentage units cannot plany the same mediating role as the Fourth AP-fund might have done, had it become necessary at some point.

At the same time it should be noted that the above table "only" identifies 82.3 percent of the votes in Ericsson. During a possible conflict, there are then 17.7 "outstanding" percentage units of votes which could chose sides at a stockholders' meeting, i.e. go along with either Peter Wallenberg or Jan Wallander. Such a conflict might possibly concern Hans Werthen's successor as chairman. Another one would, of course, be the president's successor when that time comes.

Parallel with these changes in ownership, some very important things for Ericsson have taken and are taking place, i.e. negotiations between Ericsson and the National Telecommunications Administration, between Ericsson and the Italian government, as well as between Ericsson and the Spanish government. These three negotiations have all concerned cooperation in various forms and, in addition, the fact that these three different, opposite parties were to have received voting shares in Ericsson.

Today foreigners own over 40 percent of Ericsson--but that is 40 percent of the capital. In other words, the foreigners own B-shares. Since these B-shares have a thousandth of a vote, compared to the A-shares, it could be said that it would be a big thing if Ericsson were to negotiate a solution allowing foreigners, and for that part the Swedish government to enter as strong voting owners.

Ericsson's discussion with the National Telecommunications Administration concerned Ericsson's finding a way of working with the subsidiary of the Telecommunications Administration, Teli, which has had a monopoly on telephones and private exchanges in Sweden, while it has begun to compete with Ericsson in other countries. One variation being discussed, was smoking the peacepipe and allowing the holding company, Teleinvest, to buy into Ericsson with about 10 percent of the votes.

Intelsa

Ericsson owns 51 percent of Intelsa in Spain. The state-owned Spanish enterprise, Telefonica, owns the other 49 percent. Ericsson has been and is negotiating a purchase of these 49 percent. Previously, there were discussions about selling about five percent of strong voting shares in Ericsson to Spain.

Intelsa has about 30 percent of the public telephone-exchange market in Spain. The French telecommunications company, Alcatel (which recently bought ITT's telecommunications division), has the rest, i.e. 70 percent.

Ericsson owns 70 percent of the Italian company Setemer, which is quoted on the stock exchange. Setemer's share of the public telephone-exchange market is about 20 percent. The state-owned Italtel has 55 percent. The rest is divided between the French Alcatel and GTE.

The state-owned Italtel is discussing a merger with the Fiat-owned telecommunications company, Telettra, the new name would be Telit. This combination would like to get a foothold in an internationally productive company, hence the discussions with Ericsson. An Italian voting share of ten percentage units have been discussed.

Ownership Power

For some time past, foreign voting shares have been removed from the agenda. That is because Peter Wallenberg refuses to allow foreigners voting shares in Ericsson. That means that he exercised his power of ownership against the chairman of the board, Hans Werthen, who had held out the prospect of voting shares during negotiations both in Italy and in Spain.

From all appearances, Peter Wallenberg has adopted a historical perspective, where his father's 30-year effort to get rid of ITT as a major owner, is playing a large part. The DAGENS NYHETER cannot say whether a split exists today between Hans Werthen and Peter Wallenberg and if so, how serious it might be. Those who know Hans Werthen are surprised that he has allowed himself to become repudiated by Peter Wallenberg. On the other hand, perhaps we have not heard the last word as yet.

A split would be possible, if Italy were to decide to seek another partner. Ericsson cannot afford set-backs in the Italian market, since Italy is Ericsson's largest single market for telephone exchanges.

Peter Wallenberg has studied the contents of this text and has asked for space for this rejoinder: "Sven-Ivan Sundqvist's article contains gross exaggerations and in certain parts direct errors."

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END